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The Southern Immigration Question.

By D. Allen Willey.

Immigration is one of the greatest needs of the South today. While the wonderful industrial development of this section has attracted thousands of manufacturers, merchants and capitalists who have invested their millions with willing hands, the fact that the Southern States form one of the most desirable localities on the globe for the farmer and the poorer class of people seems to have been largely overlooked. Every Southern State has large areas of fertile land which remain untilled, simply waiting for some one to cultivate them. The demand for farm labor is general, and an average hand can readily earn from \$3.50 to \$6.00 per week and board. These figures tell their own story.

In the last seventy years nearly 5,000,000 persons have immigrated from Germany alone to the United States. Great Britain sends hundreds of thousands annually. Russia has sent far more than have been desirable citizens, while hordes of Italians have been landing in New York for the last quarter of a century. Scandinavian immigrants have been coming for a comparatively short period, but enough have landed to populate a large section of the Northwest. Out of all these millions the South Atlantic States have received only a few stragglers outside of the mechanics and others who, as stated, have been attracted to the manufacturing towns. The two principal railways from New York and Philadelphia having Southern connections are the Pennsylvania and Baltimore & Ohio. Statements from the immigration bureaus of these two roads show that of the number of immigrants entering the ports of New York, Philadelphia and Baltimore, not over two in 1000 have tickets for the South. Their tickets read to points reaching all the way from Maine to California, but seldom further south than Tennessee. As to the number entering Southern ports, the following comparison is significant: Principal ports receiving immigrants to the United States for year ending December 31, 1891, were: Baltimore 48,265, Boston 31,257, Galveston 39, Key West 2952, New York 474,170, Philadelphia 28,161, San Francisco 4870. Besides these, about 17,000 French-Canadians crossed the border to the United States, and 8000 of other nationalities.

Of the immigrants there are several kinds who would soon become acclimated to the Southern States. The Germans and Belgians are hardy races and of a sober, industrious character. They live frugally, are contented with little and accustomed to hardship and privation. As to wages, taking Belgium for example, the men average forty cents per day in the fields, and the traveler finds many of the women working at twenty-five cents per day. Few skilled laborers earn over what is equal to eighty cents per day in United States money. To show how fast the Belgians are leaving their country, in 1889 22,850 left Antwerp for New York and 11,434 for South America. Belgium is the most densely populated country on the globe, and the people eagerly embrace the chances to go wherever their prospects will be improved. The emigrants from Great Britain usually locate in or near the cities, and one finds a large number in New Eng-

land, all receiving twenty-five per cent. or more wages than when on the other shore. The British immigrants would be an excellent class to secure for the Southern States if they could be induced to give up urban life and enter into farming. It is hardly necessary to say that the Scandinavians are a very desirable people to settle in a country. Whether the climate in such States as Alabama, Louisiana and Florida would be suited to them or not is a question, accustomed as they are to the severe temperature of an extreme north latitude. As is well known, the Swedes and Norwegians are among the most active and industrious of the people who seek this country for a home, and, like the Germans and Belgians, are thrifty, frugal and contented with little.

Much has been said against the Italians, but our loosely-enforced immigration laws are largely to blame for so many of the worst classes from Italy getting into this country. If the peasantry from Italy could be induced to locate in the South they would be well suited to the climate and might make an excellent substitute for the present mode of labor. The Italian peasants are good farmers and especially versed in grape-growing. J. R. Landis, an enthusiast in the cause of Italian immigration, several years ago established an Italian colony at what is now Vineland, N. J. They were given a tract of 72,000 acres to cultivate, and there is now located upon it a town with fifty-three factories and over 6000 people, twenty schools and a boys' college. About 12,000 people now live on the tract. Most of them are grape-growers and produce, all told, nearly 500,000 gallons of wine yearly. The small growers have an average profit of \$250 per year. If this could be done in New Jersey it could certainly be done in other States, notably in Maryland, where experts regard the climate and land unusually well adapted to grape-growing.

To secure residents for a certain section of country is not an easy task. The great throngs of foreigners who have settled so thickly in the Northwest that there is danger now of their affecting the American customs in some of the States did not go there haphazard. Many years ago an elaborate plan was formulated to induce immigrants to locate in Minnesota, Wisconsin, the Dakotas and adjacent territory. It was encouraged by the Northern Pacific Railway Co. and tributary systems for ostensible reasons, and received the sanction of the various State governments. Some of the inducements were specially low rates of fare from the mother country direct to the future home of the immigrant, and a land grant of so many acres to any family living upon it a certain number of years and cultivating so many acres. The number of acres varied in different States. These inducements were spread broadcast over Europe in circulars printed in different languages. The Lloyds and other steamship lines had them at all their agencies and naturally encouraged the movement. After a family came over and located, relatives would follow to join it, and so continued the movement to the western country until it reached the proportions shown by figures already given.

Now that immigration is restricted and the ports of the country are barred to the

scum of Europe, the South has an excellent opportunity to obtain the best class of European home-seekers by offering proper inducements and by carrying out some system of attraction which shall be sectional in its scope and not confined to a single State.

The question of inducing immigration has been taken up in several of the Southern States, but as yet little has been accomplished. State immigration bureaus or societies exist in Maryland, Virginia, Georgia, Louisiana and Texas. Most of them are political offices, and beyond issuing some circulars or pamphlets setting forth the various resources, nothing else, as far as can be learned, has been done by them. The most important movement thus far seems to be that begun by the immigration bureau of the Baltimore & Ohio Railroad, which has succeeded in locating a small colony of Swedes between Baltimore and Washington, a colony of forty families in Braxton and Randolph counties, W. Va., and a settlement of 500 Swiss people in Randolph county, W. Va. The Swedes were induced to come from Pennsylvania, but the Swiss families came direct from their native country. All these settlements are flourishing and appear to be thus far successful.

An article of this character would be incomplete without some figures showing the Southern population as given by the last census, the few foreign-born citizens save in one or two States, and the large colored population who are practically depended on for the agriculture of the section. Below is a comparative table:

	Foreign born.	Native born.	Color'd
Kentucky.....	59,356	1,799,279	268,175
Tennessee.....	20,029	1,747,459	430,581
Alabama.....	14,771	1,493,240	679,269
Mississippi.....	7,952	1,281,648	344,649
Louisiana.....	49,747	1,065,840	560,192
Texas.....	152,956	2,052,567	489,587
Maryland.....	94,926	948,613	215,897
Virginia.....	18,374	1,637,662	635,585
West Virginia.....	18,883	743,911	32,717
North Carolina.....	3,762	1,614,245	502,595
South Carolina.....	6,276	1,144,879	689,141
Georgia.....	12,137	1,825,216	588,996
Florida.....	22,932	365,490	166,473

Percentages of increase or decrease of foreign-born residents since 1880: Kentucky, decrease, 27 per cent.; Tennessee, increase, 19.92; Alabama, increase, 51.81; Mississippi, decrease, 13.65; Louisiana, decrease, 8.12; Texas, increase, 33.45; Maryland, increase, 13.88; Virginia, increase, 25.03; West Virginia, increase, 3.38; North Carolina, decrease, 1.07; South Carolina, decrease, 18.42; Georgia, increase, 14.89; Florida, increase, 131.43.

In eighteen Northern States and Territories from 25 to 50 per cent. of the entire population are foreign-born citizens.

Owing to the incomplete census returns from Arkansas the writer has been compelled to omit that State.

Baltimore, Md.

The engineers of Chicago representing the National Association of Stationary Engineers have opened at 179 to 181 Lake street a bureau of information and entertainment for the benefit of all engineers visiting the exposition. The MANUFACTURERS' RECORD and other leading journals will be found on file at these rooms. Anyone desiring information from the bureau can address A. R. Clisbe, 64 A street, St. John's Place, Chicago.

Charleston (S. C.) Leads Making Fertilizers.

By Col. J. W. Avery.

South Carolina now leads the world in the two great matters of phosphate mining and the manufacture of artificial fertilizers, and Charleston is the centre and market of these two great and swiftly swelling trades.

There are thirty-one establishments engaged in getting out the phosphate rock, with a capacity of 760,000 tons a year. There are twenty-two fertilizer factories in South Carolina making the artificial manure that has become a staple of commerce, all but five of which are Charleston plants.

The consumption of fertilizers in the world is estimated at 4,000,000 tons, of which the United States uses 1,250,000 tons, or nearly one-third, Germany and Austria using together about the same amount, England taking 800,000 tons and France 500,000 tons.

Of the twenty-two South Carolina fertilizer factories, seventeen belong to Charleston, two to Port Royal, two to Columbia and one to Greenville. These figures show the overwhelming supremacy of Charleston in this valuable manorial manufacture; and of the consumers of this fertilizer, Carolina ranked second, using in 1891 130,000 tons, Georgia alone exceeding her. A very noticeable fact in connection with the consumption of this artificial manure in the United States is the steady growth of its use in the Northern States from 210,000 tons in 1888 to 360,000 tons in 1891, giving sure promise of the certain growth of the traffic into other sections than the South, its home.

Another valuable feature of this manufacture, based upon a Southern product, is its increasing commercial relations to the outside ingredients of manufacture, whose importation in quantity helps to swell Charleston's volume of trade.

Charleston imported in 1890-91 chemicals of 50,227 tons, worth \$750,317, to mix in her home make of commercial fertilizer, and in 1891-92 her importation of chemicals grew to the large amount of 98,806 tons, worth \$1,013,060, or nearly 100 per cent. increase in quantity and 25 per cent. in value in twelve months. These chemicals in 1891-92 were as follows:

	Tons.	Value.
Kainit.....	40,301	\$165,618
Sulphur.....	24,316	580,344
Muriate of potash.....	2,566	88,915
Pyrites.....	17,0 1	62,047
Fertilizers.....	1,577	11,797
Nitrate soda.....	3,035	74,939

It will be observed that the largest single item of importation of foreign material for making this Southern fertilizer is sulphur, constituting over half of the total value. A great economical revolution is going on in this item of raw material, in the enterprising introduction of new pyrites burning furnaces and the importation of the pyrites and the manufacture of sulphur here, saving cost and labor, diminishing the expense of manufacture and maintaining Carolina's lead in this important business. One firm alone has imported this year 100,000 tons of pyrites, and this trade is rapidly increasing to large proportions.

In 1889-90 Charleston's shipments of

manufactured fertilizers were 251,650 tons, of which 134,209 tons were by the South Carolina Railroad, 70,497 tons by the Northeastern Railroad, 51,044 tons by the Charleston & Savannah Railroad and 5500 by water.

In 1890-91 her shipments were 287,975 tons—134,661 by the South Carolina Railroad, 77,970 by the Northeastern Railroad, 67,819 by the Charleston & Savannah Railroad and 7525 by water.

The heaviest shipments are made in the months of January, February and March, embracing four-fifths of the product.

Two important facts must be considered in connection with this great industry of the manufacture of commercial fertilizers, in which Charleston leads the world, and which must have a great bearing in enabling her to hold her lead in the future.

The growing development of the cotton-seed into new and multiplied uses and increasing value has about and will effectually remove this hitherto widely used factor of fertilization entirely from this field of utility, and the phosphate will take its place and its use proportionately grow.

Again, the artificial manure, so condensed and cheaper of transportation, is rapidly extending its area of popularity everywhere as the basis of composting and the strongest agent of intensive farming and gardening.

As a rule the fertilizer industry is a very prosperous one. Manufacturing large stocks, selling at remunerative prices, making good collections and paying excellent dividends, establishing the securities as favorite investments, these companies have been popular and constituted a leading element in Charleston's business and financial strength, and there is every reasonable prospect of this continuing.

Annual Meeting of the Elyton Land Co.

The annual meeting of the Elyton Land Co. was held in Birmingham, Ala., on Tuesday, May 4, and the following directors elected: H. M. Caldwell and T. T. Hillman, of Birmingham; D. S. Troy, Bolling Hall, F. M. Billing and B. J. Baldwin, of Montgomery, and Jas. T. Woodward, of New York. The board met and re-elected H. M. Caldwell, president; L. P. Ware, secretary and auditor, and A. T. London, general counsel. The office of vice-president was abolished and the election of a treasurer postponed.

During the directors' meeting Col. D. S. Troy presented a plan for the sale of the Elyton Land Co. to the Elyton Company, which latter was chartered by the general assembly of Alabama during its recent session. The matter was fully discussed by the directors, and finally it was decided not to take any definite action until June 1, when a special meeting will be held for that purpose. This was determined upon merely as a precautionary measure, no serious objection being offered to the general plan as outlined at the meeting.

This plan provides for the issuance by the Elyton Company of not less than \$2,000,000 preferred stock, par value \$100, bearing 6 per cent. interest, the proceeds of which are to be used to pay off the trust bonds of the Elyton Land Co. and aid in the erection of a steel plant and other industrial enterprises in Birmingham. When this is accomplished the Elyton Land Co. will convey to the Elyton Company all of its property in consideration of the \$2,000,000 cash paid in preferred stock, and also of \$3,000,000 of the capital stock of the Elyton Company, this amount being divided pro rata among the stockholders of the Elyton Land Co.

In case legal complications should prevent the transfer as proposed, the Elyton Land Co. will increase its capital stock to \$5,000,000, of which \$2,000,000 will be preferred stock and \$3,000,000 common stock.

The Business Interests of Montgomery, Ala.

The annual meeting of the Montgomery Commercial and Industrial Association was held in Montgomery, Ala., on the 2d inst. The meeting was called to order at 8.30 P. M., with President Houghton in the chair. After a few preliminary remarks in reference to the association and its objects the president proceeded to read his annual report. The report reviewed the progress and development of the city and county since the organization of the association in March, 1890. The president stated that the objects of this body are similar to a chamber of commerce or board of trade, to promote the social intercourse of the members and the commercial and industrial resources of the city and State, and to take vigorous action in all matters pertaining to the fostering and encouraging of home institutions and industries and establishing new industries in the city and county. The report contained important data, of which the following is an abstract:

The assessed value of real and personal property in the city and county of Montgomery for the year of 1890, the year of our organization, was \$17,450,876, and for the year 1892, a period of two years, \$19,271,883, an increase of \$1,821,077. If to this amount is added the value of railroads constructed during the years named in the county and city, the increase would be \$3,000,000.

The transit facilities of the city have been increased by an addition of eleven miles of well-equipped electric street railway. The Cloverdale Company has seven miles of track and seven cars, the West End Company has four miles of track with five cars and the Terminal Company has ten and a-half miles of track with twenty-three cars, making a total of twenty-three and a-half miles of street railway and thirty-five cars. The service is good, and all parts of the city can be readily reached.

There are 115 manufacturing and industrial establishments of various kinds in and contiguous to the city, owned and controlled largely by Montgomery people. Some of these are small enterprises, but all employ labor and produce something. They employ 2600 hands, and have an estimated capital of \$5,000,000. The value of their products annually is also estimated at \$9,000,000.

The increase in the number of these establishments within three years has been forty-five.

Two great systems of railway have built into the city within the three years named, and also an extension of a branch road to Luverne, a distance of fifty-one miles.

The Savannah, Americus & Montgomery road gives us a direct connection with central Georgia and an additional line to Savannah. The Alabama Midland road, a part of the Savannah, Florida & Western system, connects Montgomery also with Savannah and with Brunswick, Jacksonville, Tampa and other parts.

About \$1,000,000 has been expended on another important line, the Montgomery, Tuscaloosa & Memphis, in grading the roadbed and in the purchase of rails, cars and other material.

Alabama Grand Trunk road has graded about ten miles of roadbed leading north from Montgomery, and about eleven miles of the Montgomery, Hayneville & Camden road has been graded from Camden in the direction of this city.

An additional line of steamers has also been added to the Alabama river trade in the interest of Montgomery.

The lumber interest is one of magnitude and growing importance. Montgomery is admirably situated to become the long-leaf yellow pine exchange of the South.

We find on the railroads leading into the city within easy distance thirty-nine mills with a capital of more than \$3,000,000, many of them equipped with logging railroads ten to fifteen miles in length, and also dry-kilns, matchers and dressers.

The value of the annual product is \$4,000,000, and their capacity and output is over 300,000,000 feet. Sixteen hundred hands are employed, and over \$500,000 are paid in wages.

The entire product of some of these mills and a portion of all is handled and sold by firms doing business in this city.

About 15,000,000 feet of lumber valued at \$200,000 is required for the local trade and consumption.

The Southern long-leaf yellow pine is being recognized as the best and most reliable timber available and has fought its way against formidable opposition to the first place in the world's favor.

President Houghton stated that the future outlook for Montgomery was bright. "We are assured of the early completion of a great and very important railroad to the

Northwest, and with the revival in railroad building we shall get two more desirable roads. The industrial awakening now abroad in the South will not fail to secure to us cotton factories, canning establishments and other industries." The reports of the secretary and treasurer were read, and also those of the committees on cotton trade, real estate, wholesale dry goods trade, State development and schools. The annual election of officers then being in order, the following gentlemen were elected: M. B. Houghton, president; R. F. Ligon and H. C. Davidson, vice-presidents; A. E. Mirriam, secretary, and W. H. Micon, Jr., treasurer. The following compose the board of directors: R. M. Henderson, C. G. Abercrombie, S. D. Seelye, J. E. Worswick, J. R. Warren, D. Weil, J. C. Haas, E. B. Joseph and G. W. Barnett. There being no further business before the meeting, the association adjourned.

Meeting of the Norfolk (Va.) Water Front Development Co.

The regular annual meeting of the stockholders of the Norfolk Water Front Development Co. was held on the 2d inst. in that city, a large majority of the stockholders being present in person or by proxy. Major John T. Woodhouse was called upon to preside. The annual reports of the company for the fiscal year ended May 1 were read and received. It was unanimously resolved that the balance on the capital stock be called for and made payable by June 10, 1893, and that the officers of the company be authorized to issue to all stockholders who should pay up in full deeds to the lots to which they are entitled, free from all encumbrance. The board of directors were authorized to donate sufficient water front at Lambert's Point for the establishment of a ship-building plant, under such conditions as they might deem expedient for the protection of the company. The following officers were elected for the ensuing year: Barton Myers, president; B. T. Bockhoven, vice-president; F. W. Killam, secretary, and Floyd Hughes, treasurer. The above officers and the following gentlemen constitute the board of directors: Dr. R. W. Stone, Winchester, Va.; John T. Woodhouse, Princess Ann, Va., and John F. Lawler, L. H. Shields and Robert W. Mallett, of Norfolk, Va.

Meeting of the Florida Fruit Exchange.

The board of directors of the Florida Fruit Exchange held a business meeting at the exchange in Jacksonville, Fla., on the 3d inst. There were present Messrs. George R. Fairbanks, Damon Greenleaf, B. M. Baer, H. Crutcher, E. E. Pratt, J. M. Bryan, H. Hutchinson, E. G. Hill, C. V. Hillyer, M. S. Moremen and F. G. Sampson. President Fairbanks stated that the exchange was fully equipped and prepared to handle fruit in the English markets, and the general manager reported satisfactory sales made by the Liverpool correspondents of the exchange during the past season. The officers of the exchange presented their several reports, which were received with much satisfaction.

Reorganization of the German-American Real Estate & Investment Co.

The German-American Real Estate & Investment Co., of Louisville, Ky., lately organized, will in the near future be known as the German-American Title & Investment Co. The company was originally organized for the purpose of doing a general real estate business, and under the original articles of incorporation was granted the right to advance and loan money on real estate securities, to purchase lien notes, erect houses in the city of Louisville, and invest in such other securities as the board of directors, in their discretion, might deem best. After the assignment of the Louis-

ville Title & Survey Co., this valuable title clercage was secured, and shortly afterwards the company purchased from the assignee of the Louisville Title Company its entire stock. A meeting was then held of the stockholders of the German-American Real Estate & Investment Co., and an amendment of its original articles of incorporation decided upon. In connection with the articles granted heretofore, it was also granted the right to examine titles to real estate in the city of Louisville, to issue certificates of titles thereof, and to make abstracts, maps and plats of property in the county of Jefferson, Ky. The business to be conducted in future by this company will be divided into several branches for the examination of titles, surveys of property, and to advance money on real estate securities—or, in other words, a loan and investment department. The company commenced with about fifty stockholders, and now have secured over 300 more. The capital stock is placed at \$250,000. The officers of the company are A. J. Speckhert, president; G. F. Rothenburger, vice-president, and Frank Speckhert, secretary.

Sugar Production Estimates.

The payments for sugar bounty during the present fiscal year have already reached \$8,451,679, and will exceed \$9,000,000. The actual production of sugar during the present year has not been calculated in detail at the Treasury Department, but the amount paid for bounties affords a pretty accurate indication of the production of cane, beet and sorghum. The beet production has been accurately ascertained and is 27,083,322 pounds. The sorghum production is 986,900 pounds. The total disbursements of \$8,451,679 include \$60,093 for maple sugar. Allowing two cents per pound for the beet and sorghum production, and including the payments on maple sugar, the amount likely to be paid upon cane will be about \$8,500,000. This would represent, at two cents a pound, 425,000,000 pounds, but as some of the sugar is below the two-cent grade, the actual number of pounds will probably run to 450,000,000. Accepting these figures as correct, the production for the fiscal year 1893 will compare with that of 1892 as follows:

Class.	1893. Pounds.	1892. Pounds.
Cane sugar.....	450,000,000	364,829,411
Beet sugar.....	27,083,322	12,004,828
Sorghum sugar.....	986,900	1,136,86
Maple sugar.....	3,200,000	144,82
Total.....	481,070,222	378,115,217

—Cincinnati Price-Current.

Rebuilding Dismal Swamp Canal.

The Lake Drummond Canal & Water Co., which purchased all of the rights and property of the old Dismal Swamp Canal Co., has organized at Norfolk, Va., for the improvement of that property. The company is composed almost entirely of Baltimore capitalists, who have formed a very powerful corporation under the name of the Lake Drummond Canal & Water Co. The officers of the company comprise the following gentlemen: W. B. Brooks, of Baltimore, president; W. M. Bosley, of Baltimore, vice-president; C. G. Ramsay, of Norfolk, treasurer; I. F. Sinton, of Baltimore, secretary, and Capt. Henry Roberts, of Norfolk, general manager. The board of directors is as follows: W. B. Brooks, Jr., of Baltimore; C. G. Ramsay, of Norfolk, and W. H. Bosley, Thomas R. Ballantine, R. C. Davidson, S. J. Bowdoin and J. B. Sanford, all of Baltimore. The company proposes spending between \$2,000,000 and \$3,000,000 in building a canal ten feet deep, twenty-two miles long, from Deep Creek, Va., to South Mills, N. C., connecting the great waters of the Pasquotank and the Elizabeth rivers. The work commenced on the 5th inst.

Columbia (S. C.) Summarized.

Columbia (S. C.) has many and very strong elements of municipal power, and of both commercial and industrial growth. It is the seat of government of one of the oldest and most illustrious States of the Union, an early and historical colony of the South, distinguished alike in the trade and chivalry of America.

Beautifully located on a high and rolling elevation, it commands attractive views of picturesque scenery, blending eminence, field and forest. It is one of the most healthful spots in the whole country; it is the centre of a fertile agricultural region; it is one of the best railway distributing points in the South, having strong rival trunk railroad connections in every direction; it has a water-power surpassing, in extent and convenience, even those, so famed and profitable, of Augusta and Columbus, Ga., and therefore has magnificent manufacturing possibilities, and it is an imperial truck and fruit section, and the natural location for great canning industries.

Before the war Columbia was noted for the elegance of its homes, the culture and wealth of its citizens and its typical Southern hospitality. No city better represented the best intelligence, prosperity and worth of the South. The war left it annihilated by the unsparing torch of a hostile army. Upon the ruins and ashes has arisen the handsome Columbia of today, modern, progressive, enterprising, with a great future if she so wills it and uses her strong advantages.

The same social characteristics mark her vigorous rehabilitation, and, in addition to these, she shows striking evidences of material progress. She has rebuilt many of her fine residences and restored her lovely yards. The long lines of attractive shade trees again grace her broad, straight streets with their comfort and beauty. She is adorned with stately public buildings. Large business structures testify to her important and expanding trade. An unusually imposing city hall is the home of her excellent municipal government.

Starting from an almost complete war destruction, Columbia is practically a new city, beginning from the ground, newly born, a post-war creation, a recent product, a fresh scion from an old stock, a modern growth with an ancient and honorable name; and it must be confessed that she has displayed the energy and enterprise of the new with the dignity of the old.

Columbia presents in her advantages, her environment and her career some valuable and extraordinary claims to a useful and distinguished municipal future. She has uncommon resources, has accomplished signal achievements and affords basis and promise of greater ones. She offers attractions that, if truthfully told and widely known, must draw home-seekers and capitalists.

Columbia is one of the most convenient, accessible and important railroad centres and distributing points of the entire South, eight railroads entering, many of them great trunk lines, connecting through her by shortest direct routes Western markets with the two chief South Atlantic seaports, and moving the winter travel of the North and Northwest to Florida both ways. This railway endowment, properly used, is the main factor in a massive and varied wholesale trade.

Columbia has with magnificent foresight, pluck and enterprise planned and recently finished a canal that gives her a water-power greater than Holyoke, Lowell or Lawrence, Mass., Manchester, N. H., Lewiston, Me., Bellows Falls, Vt., or Cohoes Falls and Rochester, N. Y., and, as has been stated, our remarkable Southern Augusta, Ga. Factories are already constructing, and it is but a question of time that with all the conditions at hand—raw

materials, convenient transportation everywhere, cheap and good homes and living for labor—Columbia should become a great manufacturing centre. She already manufactures over \$3,000,000 of products.

Columbia is in a native truck and fruit region, whose canning industry has been started and made successful, and which can and will grow to colossal proportions, and with her close railway touch to the North her vegetables can help supply the early demand, filling in between Charleston and Norfolk.

Columbia has the best and most educational advantages of any city of her size in the South. This is the attraction of the largest value to the best home-seeker. To a complete free public-school system Columbia adds every kind of higher education for both sexes of both races—a male State college, Catholic institute, theological seminary, women's training school and college, and negro law, collegiate and industrial colleges.

Columbia has a solid set of banks and building associations, whose safe methods well suit her clean, vigorous trade.

Columbia has a delightful climate—dry, pure, bracing, like that of Aikin—benefiting phthisis, scrofula, rheumatism and gout, and she is becoming steadily a winter health resort.

Columbia ranks high in all of the equipment of a progressive cityhood—noble churches, charitable institutions, fine water works, an electric-car system, a public-spirited Board of Trade under an able president, a capable fire service, a spirited group of military companies and a mercantile and professional guild of the highest intelligence, enterprise and integrity.

Columbia offers attractive inducements to home-seekers and capitalists and business men of every kind to locate.

Columbia has a strong press daily edited—the *Columbia Journal*, the only evening paper, and the *State* and the *Register*, morning dailies. They all take the full telegraphic service, and are metropolitan papers with the largest circulation throughout the State. The *Journal* has achieved a remarkable success and ranks with the foremost evening papers of the South.

Pyrite Refuse for Street Pavements.

About a year ago the street department of Charleston, S. C., made an experiment of laying out a portion of the roadway of Spring street with the cinders of pyrites. This experiment, which was attempted on a very small scale, proved a great success, and now the department is repeating the operation in Archdale street, between Queen and Clifford streets.

The cinders are obtained from the phosphate works adjacent to Charleston, and when mixed properly form a chemical compound that is hard and durable. The roadway in Spring street that was laid out in pyrites cinders has proved a great success, and it is anticipated that the new venture will prove the same.

Several layers of the cinders are required in laying the roadbed, and when it is properly stamped down the cinders form a hard, compact mass that is nearly as lasting as rock.—*Charleston News and Courier*.

The Virginia Mines.

Advices from Gordonsville, Va., are that the parties interested in the gold mines in Goochland and Orange counties are still digging for the metal. The latest report is that John Gorham, of the Gorham Silver Manufacturing Co., of Providence, R. I., has bought the Grimes and Vaucluse mines at private figures. The "Grasty" mine on the eastern belt of the field is to be started up, so it is said, by New York capitalists. A mica mine in Goochland county has just been sold to Boston parties at a reported price of \$120,000. It comprises a tract of 1500 acres and was owned by the Misses Irwin.

Historical Landmarks and Natural Grandeur on the Road to the World's Fair.

If you are going to the Columbian Exposition it is worth your while to make the trip count from start to finish. To the people of the East the next most important point to be considered after the "raising of a stake" is the selection of a route. It is fair to assume that most of those who will go want to get all the instruction and pleasure that the appropriation will procure. Let us see how this may be best accomplished.

As a Southern man I may at first blush be considered a sentimentalist in commanding a Southern route, but let it be remembered that the South is today as loyal to the flag as New England, and as much a part and parcel of our common country as is the State where the great admiral is now being verily apotheosized, and where the stupendous results of his genius and persistency are being so splendidly exemplified.

Aside from the pleasure of it, the people of America, irrespective of section, are disposed to account it a patriotic duty to see the Columbian Exposition, but it is a pitiful patriotism which closes its eyes to America's sublimest natural grandeur and to those historical landmarks, the battle-fields of Virginia, upon which American valor made all the world wonder, simply because the road to and through and by them runs south of the Potomac. I am persuaded that there remain at this day few who would ignore these scenes simply because they lie to the southward, and that there are thousands, aye millions, who would embrace the opportunity to see them offered by the World's Fair trip, if their attention should be directed to the fact that there is a way to Chicago from the Eastern seaboard cities which passes Manassas field and cuts through the Blue Ridge and winds and twines itself around the Appalachian mountains, where nature's colossal upheavals are alternately most ruggedly startling and dreamily enchanting.

Before getting into this northern end of what Mr. Edward Atkinson has called "The Land of the Sky," the camping ground and fighting ground of the earlier years of the war between the States is traversed for a hundred miles by this Southern route to the World's Fair, and it will ever be a source of regret to the writer that circumstances made it impossible for him to write a battlefield guide-book when a year or so ago Major Jed Hotchkiss, chief of staff to the immortal Stonewall Jackson, offered as a pure act of patriotism to go over the ground and give information, which he better perhaps than any living man was qualified to give; and his motive in undertaking the task was that Northern and Eastern lovers of native land and appreciators of American heroism might on this very occasion be enabled to know "where they were at" while passing over this Southern route Chicagoward.

The trains by this road (the Chesapeake & Ohio) leave Washington so as to give the tourist daylight through the battlefield region, and, with a stopover of one night at one of the various excellent inns in the mountains, daylight through the great Appalachian chain for near 200 miles, down the silvery Greenbrier, through the great New river canon, past the Hawk's Nest and Kanawha falls, and on to Cincinnati in time to catch a "Big Four" express which reaches Chicago in the morning.

In other words, the time from Washington to Chicago, including a night's rest and sleep under a blanket in midsummer at the "Alleghany" or the "Gladys," both as dainty inns as may be found in the land, or at the world-renowned Greenbrier White Sulphur Springs, is only a little more than thirty-six hours.

On purely business trips it is well enough

to make a dash for the fastest train and shut one's self up with a book to the end of the journey, but when on pleasure and instruction bent, one's aim should be to select the route which will contribute most largely to these two ends. Moreover, it is worth while to take life as soothingly as possible, and to husband every atom of strength on the way to the wearing, straining, tiresome task of "taking in" the most immense exposition the world has ever witnessed.

THOS. P. GRASY.

New Grain Elevator for New Orleans.

There was a report current in grain circles last week in New Orleans that the Illinois Central Railroad contemplated building an elevator to accommodate the local grain business of that port. From Mr. M. R. Spellman, the general agent of the company in New Orleans, it is learned that the report is correct, and that a grain elevator will be built at once. The location decided upon is on the neutral ground on Poydras street, on the site of the old Mississippi Valley depot. The elevator will occupy a space of about seventy-five by 200 feet, and will have a capacity of nearly 250,000 bushels, with the latest improved appliances for cleaning, sacking, mixing and storing grain, and for the general conduct of the grain business in its special department. It is the intention of the company to convert a portion of the space into a central hay market. Proper sheds will be built for storing the hay, and the business of receiving and shipping will be commenced in the early fall of the present year. The Illinois Central will be the owner of the properties, but the elevator will be public, the patrons of the road, however, receiving the preference. The grain men of New Orleans are very much gratified at the announcement of the intentions of the road, which will materially benefit the grain trade of the city.

Gypsum in Florida.

Norman Robinson, State chemist of Florida, says in his annual report recently issued: "Not the least interesting discovery which the writer during the past year has been able to announce is the presence of gypsum in easily workable and probably very extensive beds in the counties of Sumter and Hernando. This gypsum, like the so-called 'soft phosphate,' exists in a finely pulverulent state. In other words, nature, as in the case of the former product, has relieved us of the trouble and expense of grinding, and when these beds are developed, as they undoubtedly will be, will furnish this material in a very cheap form, and will play no unimportant part in the future industries of the State. It is not unlikely that these beds represent the gypsum in the form in which it was originally deposited from the evaporation of the waters of inland seas during the very latest portion of the neocene period. Whether salt, so frequently found as an accompaniment of such deposits, will be found in lower strata underneath these gypsum beds is a matter which only subsequent investigations can determine."

In our issue of April 21 an error was made in the names of the directors of the Provident Savings, Trust and Safe Deposit Bank of New Orleans. The corrected names are as follows: R. H. Walmsley, Henry Rice, George R. Preston, Nicholas Burke, Carl Kohn, Ed Tobi, J. W. Castles, J. H. Stauffer, Jr., J. H. O'Conner, W. T. Hardie, Henry Gardes, Santo Oteri, W. T. Nicholls, E. F. Dyer, L. C. Fallon, Charles Janvier, Sam Hyman, A. H. Flasoller, P. J. Maguire, W. R. Lyman and Hugh McCloskey.

JOHN C. CHASE, M. Am. Soc. C. E., Wilmington, N. C., has recently been appointed a member of the North Carolina board of health.

PHOSPHATES.^b

The Cie des Phosphates de France.

[Editorial Correspondence.]

OCALA, FLA., April 29.

The extensive plant which the Cie des Phosphates de France has been constructing for several months past is approaching completion and will soon be ready for operation to its full capacity. The mines have been working meanwhile, but not under favorable conditions, owing to the incomplete condition of the plant and the lack of cars for the handling of material. The destruction of the drying kilns by fire three weeks ago has also been considerable of a hindrance. The sheds that were burned are now being rebuilt and will be complete in a few days. The arrangement and construction of this company's plant are excellent, and have excited favorable comment from all who have visited the works. The mining is all done by hand, the material being handled by an admirable system of light portable railway, fashioned after the Decauville system, which is so largely used for similar work abroad. The track is narrow-gage, and consists of light T rails bolted to channel-iron crossties. This track is made in short sections, which are fastened together in the usual manner with four-bolt fish-plates. A mile or more of this track is in use, with a full equipment of switches, frogs, etc. The cars are built wholly of iron and steel, and are of a special shape, built for the purpose by the Corry Car & Manufacturing Co., of Chicago. They are V-shaped in section, this form making them very easy to dump. The rocking parts are of the usual type, two arcs engaged by projecting pins. These cars hold about a ton and a-half of material, and about sixty of them are now in use. They are handled to the foot of the incline at the washers by a H. K. Porter light locomotive.

The washing plant consists of two double wooden log washers, built by the W. T. Adams Machine Co., of Corinth, Miss. A third washer of the same style and make is now being set up, and the frames are in place for a fourth, which will be added when needed. The machinery of the washer-house is driven by a 100 horse-power slide-valve engine, built by the Atlas Engine Works, of Indianapolis, Ind. Steam is supplied by a pair of boilers from the W. T. Adams Machine Co. Wood is used for fuel. Water for the washers and for other purposes is supplied by three Knowles duplex pumps, six-inch suction. These pumps are placed in a square timbered pit in the engine-house, about twenty feet below the floor.

The loaded cars from the mines are hauled up the incline to the washers by a wire cable which is wound on a drum placed at the end of and just above the washer, and it is driven by a friction wheel from the shaft that drives the washers. There is a separate track and winding gear for each washer. The empty car returns on the same track, but is sent to a siding by a switch at the foot of the incline. The logs of the washers are set on an incline of about one in ten, the cleaned phosphate being worked to the upper end by the knives, while the sand is washed out at the lower end and carried several hundred yards away in a wooden flume to a reservoir which has been constructed by an embankment of refuse matter from the mine pits. The washed phosphate, as it leaves the upper end of the washer trough, falls into a revolving perforated cylinder, where it is rinsed by small jets of water. The cleaned phosphate then drops to a rubber belt conveyor which carries the material to the cars, by which it is conveyed to the kilns upon an elevated track. This track passes through the drying sheds and is suspended from the roof timbers, so that the phosphate can be dumped directly

upon the platforms of the kilns. There is, therefore, no handling of the material by hand from the time the cars are loaded in the mines until the kilns have been burned and the phosphate is ready for shipment.

There are three kilns. One of them is a brick platform of about 600 tons capacity, in which grate bars are set and the fuel is burned in flues underneath these bars. The other two kilns, each of about 1200 tons capacity, are of the primitive kind, being merely brick hearths upon which the wood and phosphate are piled. All of these kilns probably will soon be abandoned and a complete modern drying plant of three or four rotary driers will be installed.

The entire plant of the Cie des Phosphate de France impresses one as having been designed and constructed with a view to service and permanence. It is a costly plant and everything is of the best, but there is no extravagance and nothing superfluous. These are features that present themselves at first sight and after more extended examination.

The company is about to commence work with a night force, and will then employ from 300 to 400 men. To facilitate night work a complete electric-light plant will be installed. With the third washer in operation the plant will safely have a daily capacity of about 175 tons, although this quantity can be handled by the two washers now running.

The resident representatives of the company in Ocala, where the offices are located, are Mr. George Thullier and Mr. C. S. Clarke. The superintendent of the works is Mr. Vincent Calderas. E. H. S.

Phosphate Matters in Marion County.

ORLANDO, FLA., May 8.

Editor Manufacturers' Record:

The questions of very vital importance which are constantly encouraging the phosphate miners are which are the best washers and dryers. Nearly every plant has some original device; especially was this so in the early days of the industry, and various appliances for the preparation of the product have had their short era and passed to the back-number list. New devices are coming to the front, and the merits of each are being proven, and the appliance accepted or rejected, as the case may be.

I have just had the pleasure of examining the H. F. Mayfield pebble phosphate washer. The first machine of its kind, carrying out the inventor's idea, was cast and built by the South Florida Foundry & Machine Co., of Orlando, and has gone forward to the scene of its future performances at the plant of the Foote Chemical & Phosphate Co., near Bartow. The Mayfield washer, of course, is as yet an unproven machine, but the inventor is satisfied of its well-doing, and has covered his invention by letters patent.

The washer consists of a hollow cast-iron cylinder in sections, four and a-half feet in diameter and forty feet in length. The cylinder is geared with a cogged band around its middle, and revolved by power from the 120 horse-power engine of the plant, the washer probably requiring about forty horse-power to successfully operate it when in full use. The shell or cylinder weighs about nine tons, and the machine complete about fourteen tons. The entire cylinder rolls on trunnions. The shell is cast perforated, with holes about one and a-half inches in diameter and about four inches between centres, the design being to allow the ready escape of water and clay in solution. Around the entire shell is a perforated metal jacket made of steel, the holes being 120 fine, and will retain the small phosphate, but allow the escape of the water. Inside the cylinder, cast into the curved sheets composing it, are a series of pyramidal teeth two and a-half inches high and four inches between centres. The teeth are flat on one side and rounded on

the other, cast in diagonal rows. The material is received on the rounded side of the teeth, and the flat side, set at an angle to the direction of revolution, is designed to "kick" the material forward in the cylinder to the end of discharge. This forward movement may also be accelerated by tilting the cylinder.

Through the centre is a perforated cast-iron pipe six inches in diameter. The perforations are along one side of the pipe, and into the holes are fitted patent nipples, adjustable so that streams of water may be directed toward any point or at any angle deemed best to gain the most effective service. The company will use the hydraulic system of mining, so the material will be introduced into the cylinder in pretty well disintegrated condition, and after passing through the cylinder be received in conveyors and taken to the driers.

The fear is the formation of clay balls or the clogging with clay of the entire interior of the cylinder with the clay matrix, which is very tenacious and stubborn. The clay ball, which has proven such an enemy of the washers in the pebble region—any washer, in fact, where there is a cylindrical, rotary motion—is made in the machine, not born of nature. The interior of the machine is directed against this evil, and practical test can alone prove its efficacy.

Mr. Mayfield has also invented certain improvements in drying pebble, and his device will or should be called the cataract dryer. The difficulty with flume dryers is a tendency to clog. There is a period in the drying of phosphate where the material becomes almost gluey, and when the stream of pebble is supplied continuously this quality nearly always is developed disastrously to the success of the operation and greatly to the retardation of the process. The design of the new drier is to present the material to the heat intermittently and in quantities so small that the process of drying will be complete and clogging impossible, and in a manner as to enable each pebble to be reached by an equal heat. The flume is built at an angle of forty degrees, about sixty feet in length, of fire-brick, is about nine feet wide, and through this passes the heat from the furnace, located, of course, at the lower end. A special feature and an advantage claimed in the construction of the furnace is this: Around the flue is a cold-air chamber up to the point where the heat meets the material. This jacket of cold air is claimed to intensify the heat. Across the flume are arranged cast-iron shelves one foot wide, with two-inch fender on back edge, eight feet ten inches between fins, on which the shelves are balanced so as to tilt into the ascending hot-air current.

Extending through the brick work from each shelf is an arm with crank. Along the flume, full length, runs an endless wire rope on which at intervals are buttons, the rope being operated on sprocket wheels. The buttons strike the crank arms and tip the shelves within successively, and they are immediately automatically thrown back into position by counterweights, ready to receive the next dump, and so on. The distance between shelves is about two and one-half feet. In this way the material is "sprayed" through the heat, and being fed with special regulating devices at top of flume, passes out at bottom dried and ready for storage bins or cars. The practical working, the durability of parts in the intense heat and other nice questions are yet to be proven out, but the features seem to be good—better in the drier than the washer.

The Foote Company will be ready for work about the first of May.

A large lot of dumping cars and light rails have been received by the Hartshorne Phosphate Co., near Inverness, to be used in facilitating the handling both of their overburden and rock product.

One of the successful companies of the State about which but little has been said is the Standard Phosphate Co., headquarters at Ocala and working four mines, two in Levy county, one in Marion and one in Citrus. The president and general manager is Capt. W. S. Trimble, formerly of Georgia, a man who, prior to going into phosphates, made a success in mercantile lines in that State. The company is made up mostly of Atlanta (Ga.) capitalists, and has in its personnel the leading bankers of that city, notably that able financier, Mr. J. H. Porter, president of the Merchants' Bank. In the directory there is marked ability, Col. A. J. Orme being a leading spirit. The company is one of the largest shippers of hard rock in the State, its entire output going abroad through the port of Fernandina. The operation of four plants shows the faith of conviction in the enterprise, and the Standard Company has in a modest, quiet way done no little in giving tone and stability to investments in the phosphate line. This is not written to boom the Standard Company, but simply to emphasize the fact that the Florida phosphate industry has passed through the era of a speculative venture into solid business investment. J. H. JONES.

A Correction.

In a letter from Bartow, Fla., which was published in our issue of April 14, appeared the following statement:

The phosphate men of this city have been in communication with members of the Florida Phosphate Exchange & Export Co., of Brunswick, Ga., for some time in relation to manipulating the sales of their product. Nearly all the miners of south Florida will join the Brunswick Exchange and share in the enterprise, and it is said to be definitely settled that an amalgamation will take place shortly, which will strengthen the market considerably.

We have received from the Florida Pebble Phosphate Miners' Association, of Bartow, a copy of a resolution adopted by that organization on May 3, which sets forth that there was no foundation for such a statement and that the association desires to pronounce it untrue. We cheerfully comply with the request of the association, and regret that we should have been imposed upon by our correspondent to the injury of our readers.

Phosphate Markets.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, May 11, 1893.

The local phosphate market is exceedingly quiet, with the volume of trade light and prospects for an early improvement rather uncertain. At this period of the season manufacturers of fertilizers are not buying largely, and it will be some weeks before the volume of business will expand to any extent. The foreign market continues unchanged for all classes of fertilizers, and phosphates are reported about steady in values. There were no arrivals of phosphate rock reported this week. Charters reported are the schooners Augustus Welt, Ashepoo, S. C., to Baltimore, and Gertrude Abbott and W. M. Bailey, Ashley river, S. C., to Baltimore, all on private terms. Values of phosphate rock close steady, as follows: Ashley river rock is quoted \$4.75 and Charleston \$5.00, and for future delivery \$3.75 to \$4.25 for 50 to 55 per cent. product; Florida river pebble, 60 per cent. product, is quoted \$3.75 to \$4.25 f. o. b., and land pebble, 67 to 70 per cent. product, \$5.00 to \$5.50 f. o. b.; Florida hard rock is firm at \$8.00 to \$8.50 f. o. b. Fernandina.

FERTILIZER INGREDIENTS.

The market is quiet, with stocks very light, and no prompt demand at the moment. The season has not yet opened for any decided trade, and until manufacturers commence buying, the market will be more or less nominally firm in character. Blood, tankage and fish scrap are scarce, and quotations are as follows: Blood, 2.45 to 2.50 per unit f. o. b. Chicago; tank-

age, 7 per cent. of ammonia and 20 per cent. bone, \$27.00 to \$30.00 per ton Baltimore; brimstone, best unmixed seconds and thirds, \$18.50 to \$20.00; nitrate of soda, 2½ cents per pound and 2.20 to arrive; ground bone, \$28.50 to \$31.00 per ton of 2000 pounds; dissolved South Carolina phosphate rock, \$11.50 to \$12.50 per ton in bags for car lots; dried fish in job lots, \$30.00 to \$32.00; wet and acidulated, \$18.50 to \$20.00; dissolved bone black and dissolved bone ash, 18 per cent., \$20.00 to \$22.50; kainit, \$11.50 to \$12.00 per ton of 2000 pounds in bags; muriate of potash, \$1.85 per 100 pounds for spot goods of 80 per cent.

CHARLESTON, S. C., May 8.

Phosphate mining throughout the State is at present quite active, and the various companies operating are increasing the output very materially compared with same period last year. The market just now is rather firmer, and holders are very hopeful, with a disposition to ask higher figures. The shipments during the week have been very light, only 100 tons being reported for New York. There are a number of vessels chartered to load during this month, and shipments are likely to increase considerably. The list of values remain unchanged, and crude rock is quoted \$3.75 to \$4.25 f. o. b., hot-air-dried \$4.75 to \$5.00 f. o. b., and ground rock \$7.50 to \$7.75 f. o. b. in bags.

The comparative exports of crude phosphate rock and ground from the port of Charleston from September 1, 1892, to May 5, 1893, and for the same time in 1891, are as follows:

Destination.	1892-93.		1891-92.	
	Crude.	Ground	Crude.	Ground
Baltimore.....	25,660	.....	22,681	.....
Philadelphia.....	10,893	.....	11,981	.....
Boston.....	.....	850	.....	.....
Elizabethport.....	.....	.....	747	.....
Wilmington, Del.	3,779	.....	600	747
Barren Is., N. Y.	.....	1,673	.....	.....
New York.....	6,717	1,841	7,753	2,234
Mantua creek.....	1,835	.....	2,057	.....
Weymouth.....	10,220	.....	15,382	.....
Richmond.....	4,999	.....	5,264	.....
Seaford, Del.....	600	.....	1,200	.....
Newton ck., N. J.	1,078	.....	1,078	.....
Wilmington, N. C.	665	.....	450	.....
Welsh Point.....	.....	.....	.....	.....
Orient, L. I.....	.....	1,890	.....	.....
Other ports.....	4,210	.....	3,290	300
Total exports.....	70,656	1,811	76,159	3,281
By railroads.....	.....	.....	35,600	1,613
Foreign ports.....	175	.....	442	.....
Grand totals.....	70,831	1,841	112,204	4,894

FERTILIZER INGREDIENTS.

The market has ruled quiet during the week, as usual at this period of the season. Manufacturers will not likely commence purchasing until June, and in the meantime trade will be quiet. Stocks of blood, tankage and fish scrap continue light and prices are nominally firm in the absence of active demand. Ash element and ash phosphate are quoted at \$12.00 to \$12.50; nitrate of soda direct is held at \$2.50 per 100 pounds; brimstone to arrive \$20.00 per ton for best unmixed seconds, and kainit is steady at \$12.00 to \$12.50.

Phosphate and Fertilizer Notes.

THE sales of fertilizers in Montgomery, Ala., for the year ending April 30, including phosphate, manipulated goods and cottonseed meal, were over 36,000 tons, of which about 11,000 tons was cottonseed meal.

MR. WOLFE introduced a bill in the Florida State senate on the first incorporating the Mercantile Phosphate Co.

A BILL was introduced in the Florida senate on the 1st inst. to incorporate the Mercantile Phosphate Co. and to define its business and powers.

THE British steamship Storror Lee, which left Fernandina on the 2d inst. with a cargo of phosphate, grounded on the south jetty of that port. Latest advices state that

her cargo has been lightered in order to lower her draft. She is now afloat, with no apparent damage whatever, as decided by the consular survey. The Storror Lee belongs to the Murrell Line, and is represented on this side by the Brunswick Terminal Co., of Brunswick, Ga., and by C. E. Woolf & Co., of Liverpool. She is valued at \$100,000 and her cargo at \$20,000.

THE steamship Castlegate, which has been overdue at Punta Gorda, Fla., for several days, to load a cargo of phosphate, has been lost at sea. Another vessel is expected to take her cargo.

MR. E. R. CHILDERS, a prominent real estate dealer of Fort Meade, Fla., has just completed a sale of very valuable phosphate territory, located about four miles from the town, to Messrs. W. W. Gordon & Co., cotton brokers, of Savannah, Ga. It has been ascertained by experts' reports that there are over 10,000 tons of dry pebbles to the acre, the deposit being continuous, and on an average twelve feet thick, the assay of which shows over 75 per cent. of bone phosphate of lime, with less than 2.40 per cent. of iron and alumina. The tract consists of 240 acres and the terms of sale private. A working plant will probably be erected on this valuable deposit in the near future.

AT a meeting of the Rose Phosphate Mining & Manufacturing Co., recently held in Charleston, S. C., Joseph W. Barnwell was re-elected president, with the old board of directors. The stockholders voted to order the sale of the company's lands and plant. The sale will take place on the 16th of the current month.

PHOSPHATE shipments from Punta Gorda, Fla., will, it is said, be more active during the next three months than they were during the months of January, February and March. The shipments during the month of April are as follows: The schooner Florence, for Baltimore, with 1050 tons; British steamship Wileyside cleared on the 17th ult. for Harburg, Germany, with 2000 tons; schooner Lizzie M. Ells, for Mobile, Ala., on the 19th, with 130 tons, and the British steamship Cydonia, for Harburg, Germany, on the 29th, with 2343 tons—total for the month 5523 tons. The steamship Castlegate, which was due on the 1st inst. to load phosphate for Comer, Hall & Co., has been lost at sea, and another vessel will be sent to take her cargo. The Gulf Phosphate Co. and the Consolidated Phosphate Co. will make several shipments during the current month.

THE coffee industry of Mexico is being rapidly developed by the arrival of representatives of English, French and German syndicates, who have purchased extensive coffee lands in the States of Vera Cruz and Oaxaca. These syndicates will invite immigration and engage extensively in the production of the best grades of coffee. The demand for land for the cultivation of coffee is increasing rapidly, over 1,000,000 acres having been sold during the past six months. Many Americans are among the purchasers.

MR. G. REYERSHOFFER, of Galveston, Texas, who has recently been in Mexico examining the lands owned by the Alta Land & Colonization Co., states that this property comprises some 1,600,000 acres in the state of Sonora, and is nearly all exceedingly fertile and suited in every particular for agricultural purposes. Every effort will be made to colonize it. The Mexican officials are making strenuous efforts to promote immigration, and are succeeding to a most gratifying degree.

THE Warren Land Co., of Warren, Wis., has purchased more than 10,000 acres of timber land in Winston and Noxubee counties, Miss., and is now negotiating for a large cypress tract in Arkansas.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

Cottonseed Oil in Holland.

ROTTERDAM, April 29.

Editor Manufacturers' Record:

The market for cottonseed oil still remains quiet and dull, and prices are declining. This week several parcels of oil have arrived at our place, and stocks are increasing.

Choice butter oil is now obtainable at forty cents ex warehouse, but even at this low price the butterine manufacturers don't buy. They are not using much oil now because the weather is already warm, and they can still wait a good time.

It is difficult to say what price can be obtained; a good part of the owners of cottonseed oil are asking bids. Under the circumstances it is not probable that we shall see better prices, the more because every week much oil is arriving at our place. Other kinds of oil are also much cheaper.

Of late it has been very difficult to sell, and therefore nearly no business has been done.

C. W. SANCHES.

The Cottonseed-Oil Market.

NEW YORK, May 10.

Editor Manufacturers' Record:

The market for cotton oil during the past week has continued firm and further improvement in prices has been realized, total advance in cottonseed oil within a month having been six to seven cents per gallon. There has been taken about 10,000 barrels by exporters during the last week, principally for the Dutch markets. The demand from Western consumers and from local sources has amounted to about 6500 barrels or more, a large proportion of which, however, is shipped direct from the mills to the West. This has made a very important reduction in the already moderate stocks than had been looked for in such a short period. We doubt if New York is holding more than 12,000 barrels of oil in both crude and refined, while there appears very little prospect of any considerable receipts for the balance of the season. It would be impossible to take up a large line of crude in the hands of any one holder here, the stock of crude being pretty well scattered. Just at the close of the market there is a quieter feeling, but we hear of some large trades in progress, and if such trades are effected they are likely to score still further advance in prices. There is nothing whatever to disturb confidence in the situation, excepting so far as the financial stringency would affect it; that was noted in our last week's circular, and there is nothing new to report. There is a larger business in compound lard; oleo stearine and tallow have also made substantial advance in prices, but the home trade has been able to get along fairly well so far on its accumulations of oil. We think these accumulations will soon be disposed of, and they must resume buying. May and June are pretty active months with the butter churners of Holland, and, as they have been holding moderate stocks of oil, the demand from that quarter only confirms our ideas of stocks; their general wants appear to be somewhat urgent, indicated by the higher quotations for oleo oil in the Dutch markets, as well as for sesame oil. We may look for a continued demand for oil from foreign points, but think that the trade as a whole will find a further advance difficult to establish, excepting as the trade absolutely require the oil for immediate needs. Some of the food products outside of compound lard absorb an immense quantity of cottonseed oil, and of one special article there were

sold, we understand, last week fully 3250 barrels, of which cottonseed oil is the chief component.

The prices paid in this market through the week for prime crude have been from forty-five to forty-seven cents, and for prime yellow from forty-eight to fifty-one cents, with butter oil at fifty-two to fifty-two and a half cents.

It is apparent that the Continent wants to buy general food supplies, and England is showing increased interest that way. Their wants cover not only hog products, but grain as well, and this week the advance in the price of lard has been about one cent per pound, based largely upon the export demand and a moderate stock. The price of compound lard has been put up about one-half cent and the demand does not slacken, so that the relatively favorable position of cottonseed oil to the compound product remains unchanged. Altogether the situation, so far as cottonseed oil is concerned, is quite a strong one, whether one considers the probable demand or the probable supply for the balance of the season. There will be very little speculation, and whatever advance is seen in prices will be forced by the necessities of consumers, the financial situation making it next to impossible for anyone to buy in advance of his actual needs unless he has an unusually large cash capital invested in his manufacturing business.

HOPKINS, DWIGHT & CO.

Cottonseed-Oil Notes.

THE contract for the cottonseed-oil mill at Groesbeck, Texas, has been let. The work commenced is to cost \$3500 and be completed by September 1, 1893.

CONTRACT for the new mill to be built at Terrell, Texas, has been let to A. T. Schmidt, of Fort Worth, at \$28,000.

THE Mississippi Cotton Oil Co. is about to erect an additional building at its cottonseed-oil mill at Demopolis, Ala., and will furnish a new outfit for an 80-ton cotton-oil mill.

AT a meeting of the directors of the Kyle Oil Mill Co., of Kyle, Texas, a dividend of 10 per cent. was declared. The surplus is being used to enlarge and improve the mill.

MR. JOHN A. LEWIS, manager of the oil mill to be erected in Vidalia, opposite Natchez, Miss., has arrived in that city and will at once commence building operations. The mill will cost about \$75,000, and will be ready for next season's business.

THE annual meeting of the cottonseed oil-mill company at Greenwood, S. C., was held on the 3d inst., and the old officers were re-elected. A dividend of 50 per cent. was declared after reserving enough to run the mill for the coming season. The company contemplates putting in additional machinery before the next crop comes in.

THE Houston Oil Refinery & Manufacturing Co. has organized by the election of J. B. Baker, president, and John Woodhead as secretary. The company will secure a site of about thirteen acres, when work will commence upon the buildings.

WORK has commenced on the Innis Cotton Oil Co.'s new cottonseed-oil mill near Smithland, La. Mr. M. P. Phillips, the contractor for the plant, is now in Chicago arranging to secure the machinery outfit.

THE promoters of the cottonseed-oil mill at Vidalia, opposite Natchez, Miss., have awarded the contracts for the brick work on the mill to J. L. Spencer, of Natchez, and operations will begin on May 1. The number of bricks needed will be 650,000, to be furnished by the company. No contracts have been let for the carpenter work, as that will be done by the day. The New Orleans & Northwestern Railway Co. have begun putting in side-tracks and switches that are to connect their main lines with the mills.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 281.]

Railroad Development in West Virginia

CHARLESTON, W. VA., May 9.
Editor Manufacturers' Record:

Within the last few months there has been a renewed interest in the coal and coking business in West Virginia. A number of large investments have been made in coal lands by capitalists in the East and elsewhere, and preparations are going ahead to develop much of these lands in the immediate future. The Chesapeake & Ohio Railway Co. has now in course of construction or in contemplation a number of lateral lines to reach new coal territories that are being opened. Among these is the short line up the Gauley river, which is now almost completed as far as Twenty-Mile creek, and it will soon be pushed through to Camden-on-Gauley, where it will make a connection with the West Virginia & Pittsburg, a member of the Camden system. The short line up the Gauley will reach some of the richest timber and coking coal land in West Virginia, and will be a heavy feeder to the Chesapeake & Ohio main line. Another short road under construction is the one up the Upper Loup creek in Fayette county, which is to be twelve miles in length. Eight miles of this road is now about completed and will soon be in operation. Preparations are being made to begin immediately the construction of a line up the Piney river to develop the Piney river country. The construction of the Loup Creek and the Piney River roads is for the purpose of reaching the 40,000-acre tract of coking coal land recently purchased by the Vanderbilts through Drexel, Morgan & Co., of New York, and other large tracts. C. H. Lowe and others, of New York, own a tract of 40,000 acres in this same territory, and a tract of 60,000 acres is owned by a syndicate represented by President Ingalls, of the Chesapeake & Ohio Railway, and C. H. Green.

The purpose at present is to construct the Piney River road forty miles south from the Chesapeake & Ohio trunk line to reach the lands of the Vanderbilts and others, but the ultimate object is to push it on through the mountains to the Guyandotte river, near Logan Courthouse, down that stream to Huntington, to connect again with the Chesapeake & Ohio main line at that place. This will give the Chesapeake & Ohio two lines in parallel for a distance of over 100 miles. The policy of the Chesapeake & Ohio is to double-track its main line all the way between the eastern and western termini where there are not parallel lines. That part of the road which at present has no road running in parallel or none in contemplation is between Clifton Forge, Va., and River View, in West Virginia. The work of laying a double track on this part of the road is now in progress. By the purchase of the Richmond & Alleghany road the Chesapeake & Ohio has two lines eastward from Clifton Forge. By the construction of the Piney River & Guyandotte road it will have two lines from River View to Huntington, and the main line from Huntington to Cincinnati and the Lexington (Ky.) branch give the Chesapeake & Ohio two lines west from Huntington. Besides this, the Chesapeake & Ohio has made a very satisfactory traffic arrangement with the Kanawha & Michigan in order to get a shorter route to the iron regions of the lakes and to the markets of the North and West. A junction of the two roads is soon to be formed near the mouth of the Gauley river, in Fayette county. The Chesapeake & Ohio Company is building a magnificent steel bridge across the New river at the mouth of Gauley, and the Kanawha & Michigan Com-

pany is extending its line from Malden, six miles east of Charleston, to the mouth of Gauley, the point of junction, thirty-two miles east of Charleston. The work, both on the construction of the Chesapeake & Ohio bridge and the extension of the Kanawha & Michigan, is now nearly completed, and they will be in operation by the first of June. By the junction of the two roads the Kanawha & Michigan will have a through line east over the Chesapeake & Ohio line for its freight and passenger traffic.

There is now no doubt that the construction of the Coal River Railroad from St. Albans, at the mouth of Coal river, to Petoona, on the main branch of the river, or Big Coal, and to Madison, on the smaller branch, or Little Coal, will soon be put under contract. General Casement, who is now constructing the extension of the Kanawha & Michigan road from Malden to Gauley, agrees to build the Coal River road in consideration of the subscription of 50,000 acres of land to the enterprise. The donation of the land will be forthcoming by the first of July, the date set for closing the agreement between General Casement and the land owners.

The Coal River road is designed to open up a large territory of cannel and bituminous coal and timber lands in the Coal river region. It will be an entirely independent road, and the company expects to ship most of its freight to market from St. Albans by water, although connections and liberal traffic arrangements will probably be made with both the Chesapeake & Ohio and the Kanawha & Michigan at St. Albans. The government system of locks and dams on the Kanawha, furnishing at all times slack-water navigation, will be completed within three years, and this will furnish the coal shippers of the Kanawha valley a cheap waterway to market.

The West Virginia & Pittsburg and the West Virginia Central are both pushing their lines into the northern border of the coking coal region. The former has reached the new town of Camden-on-Gauley, and is doing much to open up the Gauley country.

The West Virginia Central will begin immediately to extend its line northwest from Beverly, in Randolph county, to Grafton, to connect with the Pennsylvania Railroad, which will extend its line southward to Grafton, paralleling the West Virginia & Pittsburg up the valley of the Monongahela. Having made a junction at Grafton, these two roads will work together to get into the coking coal fields in the interior of the State. The West Virginia Central contemplates extending its line to Marlinton, in Pocahontas county, to connect with the Warm Springs branch of the Chesapeake & Ohio, and thus get an outlet to the South.

Railway Combinations.

In connection with the recent sale of the Charleston, Cincinnati & Chicago to bondholders who are interested extensively in the Cincinnati, Portsmouth & Virginia line, comes a report that the former will be consolidated with the latter and completed as originally intended. President Hunt, of the Portsmouth system, states that the "Three Cs" will be completed to a point in Kentucky as soon as the reorganization committee has time to examine its condition and take action. The Charleston, Cincinnati & Chicago now has lines 213 miles in extent. Its northern terminus is Ellison's Mills, Tenn., and its southern terminus Camden, S. C.

The Central Trust Co., of New York, has practically obtained control of the Marietta & North Georgia and the Atlanta & Florida. This fact has probably given rise to the statement that the two roads will be united and operated as one system. By building a southern extension to tap some Florida road, the combination would

form a trunk line direct from Atlanta to Florida. This, it is reported, may be done by the new owners, through Adam Dutenhofer, of New York.

The Brown-Central Suit.

The suit brought by Alexander Brown & Sons, of Baltimore, to prevent the Hollins scheme of reorganizing the Georgia Central system will come up in the United States Court May 25. Until a decision is reached it will be impossible to effect a reorganization, unless a compromise is made among the bondholders and others interested. Mr. Alexander Brown gives a complete statement of the position taken by the firm in this reorganization scheme. The firm of Alexander Brown & Sons represent holders of bonds to the amount of \$4,995,000, on which interest has not been paid for a year. They are opposed to the plans of Hollins & Co., Mr. Brown states, because they think the proposed capitalization of \$90,000,000 far too great; in fact, \$40,000,000 more than necessary, and much more than the system could be operated under successfully. They have made a proposition to the court to take the \$4,995,000 in securities owned by their clients, many of whom reside in Baltimore, at par and accrued interest, but if this proposition is declined, they will carry the contest as far as the courts will allow in case they receive an adverse decision in the pending suit.

"The Georgia Central system is an excellent one in our estimation," said Mr. Brown, "and we have no desire to disintegrate it, for some of the lines now operated at a profit could not be successfully conducted outside of the system. It is better to have but one head to it. As to Mr. Comer personally, we have no objection, provided that he does not serve the interests of any individual or corporation in his management. We feel that the receiver, whoever he may be, should follow strictly his duties as outlined in the order of the court. In connection with the receivership the names of Charles H. Phinizy, of Augusta, and W. W. Douglas, of Savannah, I have heard mentioned. We consider both gentlemen capable for the position, and should have no objection to the appointment of either should the court so decide. It is not necessary to select anyone outside of the State to administer the affairs of the system economically and judiciously. As to the receivers of the separate lines, such as the Port Royal & Western Carolina, so far appointed, I cannot say what action we shall take about them until the present suit is tried."

Mr. Brown further states that while no announcement has been made to his firm, he has reason to believe that Drexel, Morgan & Co. will await the outcome of the present bondholders' suit before proceeding further with the Richmond Terminal reorganization. As yet the Drexels have taken no position against the action brought by Alexander Brown & Sons.

Receiver Comer is discharging men and economizing in other ways on all the roads of the Central system.

Want Higher Rates.

The South Carolina railway companies are laboring with the railway commissioners of the State to advance the rates of freight. They claim that with the existing schedule they cannot pay expenses and interest, saying nothing of making a profit. According to a statement submitted to the commission, the 2,535 miles of road in the State earned on an average \$3,069 per mile in 1892. The average earnings of railways in the United States for the same period were over \$6,500, or over twice as much as those of the State. The earnings of the Port Royal & Augusta and Port Royal & Western Carolina roads were only \$1,497.12 and \$2,601.17 per mile, respectively. Some of the roads, owing to

the low freight rates, have not even earned their operating expenses. The companies ask for an increase of 10 per cent. on fertilizers, 12 per cent. on cotton and other articles in proportion. The commissioners have the matter under consideration.

The question of taxation is still unsettled, and, although Governor Tillman has demanded that the taxes be paid and has refused to submit the question to arbitration, no payments have as yet been made. If the increase in rates is granted the railways will be in a much better position to pay their taxes and at the same time keep from going to the wall financially.

The Pennsylvania Railroad.

The affairs of the Pennsylvania Railroad have become conspicuous in the financial world by reason of its annual report and its issue of \$4,000,000 worth of 4 per cent. gold bonds. The report, which is compiled by Charles E. Pugh, third vice-president, shows material improvement in volume of both passenger and freight traffic transported, but, owing to lower average rates being received, the increase in revenue was not as large. Freight business increased 4,620,527 tons, or 7 per cent., in the number of tons moved. The total passenger business increased 4 per cent. in the number of passengers carried, and average earnings per passenger per mile decreased 4 per cent., and average expenses decreased 1 per cent., thus decreasing average profits per passenger per mile 12 per cent. The gross earnings of the Pennsylvania Railroad division were \$42,359,540; operating expenses, including rentals and equipment, \$28,558,712; net earnings from operating, \$13,800,827, a decrease over 1891 of \$1,025,586. The gross earnings of the United Railroads of New Jersey division were \$18,642,350; operating expenses, \$14,777,612; net earnings, \$3,864,737, a decrease of \$188,116. Gross earnings from the Philadelphia & Erie Railroad division, \$7,480,464; operating expenses, \$5,124,698; net earnings, \$2,355,948, a decrease of \$207,231. It is understood that the company intends making a reduction in wages of 5 to 20 per cent. all along its lines.

The issue of bonds form part of a possible issue of \$100,000,000, subject only to a prior lien of \$19,997,820 general mortgage bonds, against which an equal amount of consolidated mortgage bonds is reserved. This consolidated mortgage covers all the property and franchises of the Pennsylvania Company. It is also a first lien on the leasehold interest in other lines and canals. The bonds will be offered at 102½, and the list will be opened May 15 through Speyer & Co., of New York, and Speyer Bros., London.

Baltimore & Ohio to Induce Immigration.

The land and immigration department of the Baltimore & Ohio Railroad at Baltimore, Md., has prepared a richly illustrated pamphlet in German which is to be circulated among the people of that nationality in this country and abroad. The pamphlet is only one of a series of efforts which Mr. M. V. Richards, the Baltimore & Ohio's immigration agent, is making to attract a desirable class of immigrants to the South. It treats of the natural advantages of the South, describes the various farming lands, the varieties of crops that can be raised, nature of the soil, etc. Maryland, Virginia and West Virginia are very thoroughly described, and the inducements they offer to the home-seeker are dwelt upon at length. The engravings, which are excellently executed, give the reader an idea of beautiful scenery found throughout the section of country described. Baltimore harbor, the Virginia springs, Natural Bridge, Harper's Ferry, the Shenandoah valley and farm and harvest scenes are among the illustrations. One of the practical features of the work is a

list of desirable locations where immigrants can obtain cheap land. It is the intention of the Baltimore & Ohio to circulate the book very extensively in Europe, and it will doubtless have an important bearing on future Southern immigration.

New Railways in Texas.

Texas is rapidly coming to the front as a railway-building State. At present new lines are being planned or built in nearly every part of Texas where transportation facilities are needed. Although a number of roads have been completed within the past year, the ones on paper and partly constructed are still numerous, and the demand for railway material from southwest corner of the country bids fair to be heavy for a year or more at least. One of the most important of the schemes is the building of a line from Waco, near the centre of the State, through the eastern pine lands to Cheneyville, where connections would be made with the Texas Pacific and Southern Pacific systems. From that point it is planned to continue to New Orleans. The proposed road to Cheneyville would be about 150 miles in length. Waco capitalists are pushing the matter and have held several meetings, at the last of which a committee was appointed to have preliminary surveys made. A line about to be constructed is the Fort Worth & Albuquerque, from Fort Worth to Albuquerque, N. M., a distance of 110 miles; thirteen miles of it have been graded already. It will pass through a country which is said to be rich in coal and other minerals, and will open up a large agricultural section and tap the Atchison, Topeka & Santa Fe system at its Albuquerque terminus. Another move in railway extension is the action of the directors of the Texas & New Orleans branch of the Southern Pacific, who favor issuing \$4,195,000 in bonds, part of which is to be used in extending the line to Marshall, Texas, by way of Tyler, Henderson, Nacogdoches and San Augustine. The business men of Houston are reported as heartily in favor of the idea. The railway extends at present from Houston to the Sabine river, a distance of 192 miles. The Marshall extension would be about 45 miles in length.

A recent survey has been completed for a line to be built between Gainesville, Texas, and the coal mines, about 75 miles distant. Such a road would pass through Dexter, Tishimingo and Coal Gate and penetrate an excellent farming country. The idea of the projectors is to have the road merged with the Huntington or Santa Fe systems. Bonds will be issued for building the road at the rate of \$20,000 per mile.

Official Railway Changes.

Among the official changes made on Southern lines are the following:

W. S. Hoskins, of the Sabine & East Texas, to succeed M. D. Monserate as general superintendent of the Gulf, Western Texas & Pacific.

Passenger Agent R. W. Andrews, of the San Antonio & Aransas Pass, has resigned.

T. H. Hubbard, of New York, has been elected president of the Austin & Northwestern.

J. M. Gill has been appointed superintendent of four divisions of the Chesapeake & Ohio system.

A. Cunningham succeeds J. T. Cunningham as paymaster of the International & Great Northern.

Improving Train Service.

Passenger agents of many Southern lines are looking for an increased business this summer, and are improving the train service. The Baltimore & Ohio will make a specialty of its through trains to Chicago from Baltimore and Washington by way of Pittsburgh, Pa., and Akron, Ohio, and using the rock cut made at Harper's Ferry. The

Seaboard Air Line has put on a new through train between Washington, D. C., and Atlanta, Ga., running via Richmond, Va., Weldon and Raleigh, N. C., Chester, S. C., and Athens, Ga. The Norfolk & Western will run a through train from Norfolk, Va., to Columbus, Ohio, beginning May 14. At Columbus connection will be made for Chicago and other Western points. The South Carolina Railroad has made such a success of its Asheville (N. C.) business that it will continue running vestibuled trains from Charleston, S. C., to Asheville during the summer. The Santa Fe will have sleepers on its fast trains from Kansas City to Houston and Galveston, Texas, this summer. The Flagler railway system in Florida, it is understood, will have a through service from Jacksonville, Fla., to Chicago.

World's Fair Southern Rates.

Several conferences of Southern railway passenger agents have been held recently relative to making rates to the World's Fair. The question seems to be if it will pay to make a low rate and depend on the increased business to make up for the loss in profit. In some sections, especially Texas, it is stated that the percentage of passenger business to Chicago will be small unless the rates are placed much lower than they are at present. With the improved train service mentioned elsewhere in this department the several trunk lines having Chicago connections can carry all who wish to go with ease. Vestibuled trains and superior sleeping-car service are no longer rare on the Southern systems, and it would seem that the only thing necessary to start the World's Fair movement is a reduction in round-trip tickets. The rate war in Colorado may reach Texas and Louisiana, as several of the systems in the fight have branches in those States. If this occurs people in those States can see the great exposition for a nominal figure.

Reaching Southward.

The report that the Big Four system, in other words the Cleveland, Cincinnati, Chicago & St. Louis, might build a bridge over the Ohio river from Jeffersonville, Ind., is confirmed by a dispatch from Cincinnati stating that the directors of the company, at a meeting held May 10, resolved to issue a \$50,000,000 blanket mortgage covering the company's indebtedness, and to extend the line to Louisville, Ky., and Jeffersonville, Ind., which is directly across the Ohio river from Louisville. The latter city is located on several extensive Southern systems, such as the Newport News & Mississippi Valley, Chesapeake & Ohio, Louisville & Nashville and Louisville Southern. A close traffic arrangement with one of these railways would enable the Big Four to maintain a through service to Cincinnati, Indianapolis and Chicago from the South.

Railroad Notes.

THE Norfolk & Western has ordered thirty-five cabin cars from the Roanoke Machine Works.

J. W. CABANISS, cashier of the Macon (Ga.) Exchange Bank, has been chosen permanent receiver of the Dover & Statesboro, a line ten miles in length running between the points named. It was chartered in 1889.

THE Owensboro, Falls of Rough & Green River road has passed under control of the Newport News & Mississippi Valley. The road extends from Owensboro to Fordsville, Ky., and is twenty-six miles long.

PETERSBURG (Va.) people want the union depot changed in that city to a point south of its present location.

IT is reported that the 5 per cent. general mortgage on the Richmond & Danville road is to be foreclosed. If this is done it will relieve the Richmond & Danville from

guarantees made to its leased lines. The bondholders specially interested in the road will have an opportunity, if it is sold, to bid it in and reorganize it independently of Richmond Terminal interests as represented by Drexel, Morgan & Co.

THE annual meeting of the Port Royal & Western Carolina Railroad Co., held at Augusta, resulted in a division. A faction opposed to the 9000 shares held by the Georgia Central elected one set of directors, while the Georgia Central people, headed by Receiver Comer, elected that gentleman president. Both meetings then adjourned.

TEXAS freight agents are to meet and try to make a uniform increase in rates, which have been cut within the last month.

THE Macon & Birmingham Railroad, which has been taxed too high by the State assessors, it is claimed, will be revalued for taxation.

THE Johnston Steamship Co. is examining the harbor facilities at Port Royal, S. C., relative to establishing a line of vessels to be used in carrying export freight for the railway at that port.

THE Cotton Belt system may be extended from Gatesville to Brownwood, Texas.

THE Houston & Texas Central carried 2935 more bales of cotton during April, 1893, than during April, 1892.

THE Missouri, Kansas & Texas will begin running trains from Hannibal, Mo., to Houston, Texas, within a week.

THE American Express Co. will open offices at Houston, Texas.

H. J. MEYER, of the banking firm of Blake, Boissevain & Co., who are interested in Norfolk & Western securities, denies statements that the system will use another loan.

THE Texas & Pacific operating expenses, it is reported, will be reduced \$5000 per month.

THE annual report of the Wilmington & Northern for year 1892, just issued, shows: Gross earnings, \$482,607; net, \$81,377; interest on bonds, \$27,150; surplus, \$54,227. The bonded indebtedness of the company has been increased by the sale of \$234,000 new general mortgage bonds.

THE reorganized Natchez & Northwestern Railroad Co., which proposes to build a line between Natchez and Meridian, Miss., has elected C. H. Hammell, of Kansas City, Mo., president.

THE terminal property and wharves at Norfolk, Va., recently bought by the Chesapeake & Ohio, will be controlled and developed by the Norfolk Terminal Co., of which Decatur Axtell, of the Chesapeake & Ohio, is president.

THE cut in freight rates on bagging and ties made by Texas lines has been discontinued and the old scale is now in vogue.

THE Fort Worth (Texas) *Gazette* states that three carloads of Chinamen "in bond" came in over the Denver and went east on the Texas & Pacific to New Orleans.

THE name of the Wilmington, Onslow & East Carolina has been changed to the Wilmington, Newberne & Norfolk. It is a North Carolina road.

SUITS aggregating \$38,000 have been brought against the Belt Railroad Co., the Maryland Construction Co. and Ryan & McDonald, contractors, at Baltimore, for damages alleged to be caused by the railway tunnel being built in that city.

S. W. FORDYCE and W. B. Dandridge have been re-elected president and general manager of the St. Louis & Southwestern, and Willard Fisher and Howard Gould president and vice-president of the Tyler Southeastern Railway. Both meetings were held at Tyler, Texas, May 1.

SPECIAL COMMISSIONER HORN, appointed to report on the receivership of the Houston, East & West Texas, has filed his report at Houston, which shows that the purchaser

of the line, E. S. Jemison, has complied with the terms of the sale. The price paid was \$1,200,000, of which \$17,160 go to the road's attorneys for fees.

J. W. BURKE has been elected president of the new road chartered from Austin to Bastrop, Texas.

THE Atchison, Topeka & Santa Fe statement for March for the entire system shows: Gross earnings, \$4,130,539—increase, \$576,453; net, \$1,070,593—increase, \$72,050; deficit after deducting one-twelfth of the annual fixed charges (estimated), \$48,406—decrease, \$70,050. For nine months: Gross, \$48,415,747—increase, \$2,672,823; net, \$12,002,169—increase, \$72,284; surplus, \$1,931,169—increase, \$704,841.

THE State laws of Kansas require all Kansas corporations to have their general offices in the State. The Missouri, Kansas & Texas recently removed its offices to St. Louis. The attorney-general will try to have the road's charter revoked unless the offices are moved back into the State.

WACO, TEXAS, has been selected as a site for a railway hospital.

MAYOR MOSBY, of Cincinnati, Ohio, has sent a message to the city council recommending the sale of the city's interest in the Cincinnati & Southern Railroad. He thinks the proper operators would put the line on a prosperous basis.

It is reported that Meyer Bros., of Duluth, Minn., who have purchased a large tract of land on Galveston bay, in the vicinity of Galveston, Texas, will build extensive wharves for railway terminals, vessel room, etc. They are now constructing a railroad from a point on the Galveston, Houston & Henderson Railroad, eleven miles from Galveston, to their property, and have purchased a locomotive. They intend, it is reported, to make this a shipping point as soon as the bay is deepened by the United States engineers.

THE Mississippi railroad commission has passed a law that every railroad company shall keep rooms open for the reception of passengers at all passenger stations at least one hour before the arrival and one-half hour after the departure of passenger trains, and all reception rooms shall be made comfortable, and shall be kept in a cleanly condition, and properly heated when necessary, and properly lighted at night. The agent or person in charge shall preserve order, and, if necessary, eject any person whose conduct is boisterous or offensive. Every failure to comply with this statute subjects the railroad company to a penalty of \$500.

THE extensive onyx deposits of Oxaca, Mexico, are attracting numerous investors from the United States. A New York syndicate recently purchased a valuable quarry of this material. W. E. Bell, representing a number of Milwaukee (Wis.) capitalists, has also made heavy investments in the states during the past few days. The deposits will be developed immediately and the onyx shipped to the United States.

MINING circles in Guanajuato, Mexico, are excited over the discovery of extensive and rich deposits of tin south of the city. The find was made by Frank Gordon, an American prospector, who has been making investigations of the mineral resources of the state in behalf of a Philadelphia syndicate. The work of developing the deposits will begin as soon as the machinery can be obtained.

LAND in the suburbs of Wheeling, W. Va., is in demand for residence sites. The West Virginia Building and Loan Association has recently secured an option on 100 lots on Wheeling Hill, where already over 100 lots have been sold to individuals. The land is to be improved with cottages, which will be owned by members of the association.

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BALTIMORE, MAY 12, 1893.

Notice to Advertisers.

The last forms containing advertisements are closed on Tuesday afternoon. New advertisements or changes should be received not later than Tuesday noon to ensure attention in the issue bearing date of the following Friday. Reading matter should be in our office on Wednesday, although late news can be received early Thursday morning.

THE Georgia watermelon has been taking a more and more prominent position in the shipments of Southern fruits to Northern points, and this present season will probably see the greatest crop ever grown. There are now growing nearly 30,000 acres of this fruit, and at an average yield this will give 15,000 carloads which will be sold in the Northern markets.

THE immense volume of water now coming down the Mississippi river is cutting in the bank above Memphis, Tenn., and it is feared that the channel will cut into Hopefield lake, and through it into the old cut-off back of President's island, thus leaving the city on a bayou which would gradually fill in, as was the case at Vicksburg. This matter has been before the Mississippi river commission for several years past, but that body has not felt any occasion for action until now, when boats have been sent to the threatened point and efforts made to protect the banks. Should the river pass the obstructions and take the course indicated, it will leave the Memphis bridge over a dead-water bayou and require another one across the new channel.

A PLAN proposed by R. H. F. Sewall, of Bessemer, Ala., for holding a river in its course and preventing caving has in it several excellent features worthy of the attention of the Mississippi river commission. Mr. Sewall proposes driving piles at threatened places, setting the first in the bank and following with others set close together in line and running into the river at a right angle to the course of the current. These piles would cause an eddy to form both above and below them, and in this eddy would be deposited the silt carried by the water, thus gradually filling in the bank. By placing parallel rows of these piles at intervals along a stretch of land the current would be deflected by the first and in each of the others form an eddy, thus protecting the property. There is no reason why some such plan should

not be perfectly feasible and less expensive than the methods now used.

THE general feeling among coal operators in Birmingham is that both the present condition and future outlook of the trade is very encouraging. Almost every mining company is now handling more coal than ever before, and each has been compelled to increase its capacity to meet the demands made upon it. The Mississippi river trade, which will require about 250,000 tons per annum, will soon be in the hands of Alabama producers, as the barge line from Greenville to New Orleans will be in operation within ninety days. The export trade has been steadily increasing, and there is every indication that during the coming year it will assume much greater proportions.

Prizes for Southern Stories.

An offer of prizes for original sketches of Southern life is announced by the *Southern States* magazine, which is published by the Manufacturers' Record Publishing Co., of Baltimore. A prize of \$50.00 is offered for the best original sketch or story dealing with Southern life and conditions, and \$25.00 will be given for the story that shall be judged worthy of second prize. The only conditions are that the sketches submitted shall present true pictures of Southern life, that they shall be original, and that they shall not exceed 5000 words in length. This offer holds good until July 1, and the prizes will be awarded as soon after that date as the manuscripts submitted can be examined. This offer is made in the hope of securing contributions of a character that will benefit the South by their wide publication in the *Southern States* magazine.

Southern Securities.

Though the country is passing through one of the gloomiest financial periods in its history, the condition of affairs in the South, as reflected by the stock market, shows that that section is holding well up against the adverse tide. It is interesting to note that although Southern railway stocks went down in sympathy with the depression in Wall street, still there was no break in any individual stock, and in the reactions from time to time these securities were quick to respond to the general upward tone of the market. This would indicate that the holders of Southern stocks have confidence in their investments, and that it will take much to induce them to sell at a sacrifice. The sales of the Atlanta & Florida road and the Charleston, Cincinnati & Chicago system relieve the feeling of uncertainty which has existed towards them, while reports that they will be improved and extended will tend to restore confidence in their management. Georgia Central affairs are still hanging fire, but the opinion of financiers seems to be that the system is a paying one, and under ordinary conditions will repay with interest all investments made in it. The trial of the bondholders' suit in the United States court May 25th may result in adjusting everything satisfactorily.

Taking the lowest quotations on a group of Southern railways April 17 and May 8 the following results are shown: Chesapeake & Ohio, April 18, 23 $\frac{1}{4}$, and May 8, 20 $\frac{3}{4}$; Louisville & Nashville,

72 $\frac{1}{4}$ and 71; Missouri, Kansas & Texas, 13 $\frac{1}{2}$ and 13; Mobile & Ohio, 28 $\frac{1}{2}$ and 20; Norfolk & Western preferred, 29 $\frac{1}{2}$ and 29 $\frac{1}{2}$; Richmond Terminal, 7 $\frac{1}{2}$ and 6 $\frac{1}{2}$; Tennessee Coal & Iron Co., 21 and 18 $\frac{1}{2}$. With one exception, the decline in all these stocks from April 18 to May 8 was not over two and a-half points, and this during a period when such strong securities as Chicago & Northwestern and Delaware, Lackawanna & Western fell four and five points. These figures have a peculiar significance just at this time.

Water-Power for Cotton Mills.

In commenting upon the short article in our last issue, in which D. A. Tompkins gives a statement concerning the comparative cost of steam or water-power for operating cotton mills, the Macon (Ga.) *News* says the statement made is "a glaring display of ignorance on Mr. Tompkins's part, and it is a surprise that it has received a quasi sanction from the MANUFACTURERS' RECORD, which is supposed to be an authority upon such subjects." Continuing, it states that water-power is contracted for in Augusta for \$5.50 per horse-power per annum, and the instance alluded to in Mr. Tompkins's statement, when the Augusta mills were closed for three months on account of a freshet breaking down the canals, was an event which might not occur once in a thousand years.

Had the *News* read the article more carefully it would have seen that Mr. Tompkins's assertion was not that steam-power was in all instances better than water-power, but that in each installation all conditions must be considered before either means of obtaining power was decided upon. The mere fact of close proximity to a waterfall is in itself no evidence that power obtained by developing it would be cheaper than the use of fuel. The regularity of the water supply and various other considerations must be given due weight, and in estimating the cost of power there must be included interest on such improvements as must be made to develop it, and also interest and repairs upon the machinery used.

The instance of the canal breaking at Augusta is certainly an unusual one, and there may never be a repetition of such an accident. The reference to it was merely an illustration of one of the things to be considered. As to the price of power in Augusta, there are few cities in this country which have such a magnificent water-power at their command, and there cannot be any question as to its being far cheaper than coal per unit of cost per horse-power per annum. But the whole matter resolves itself back to the very plain and business-like statement made by Mr. Tompkins, that in estimating the relative values of steam or water-power there are many matters to be considered in the latter, some of which have been overlooked by too sanguine builders.

Evils of the Consignment of Perishables.

The practice of shipping goods to distant markets on consignment gives rise to many complications and almost invariably works to the disadvantage of the shipper. This is particularly true as regards perishable goods, such as fruits and vegetables. Where the market is

close to the point of production, as, for example, in the case of the truck farms surrounding the great cities, the producer is able to keep in sufficiently close touch with the market to enable him to judge of its conditions and opportunities. But in the case of truck farmers and fruit growers in the South who ship their produce to Northern markets as fast as ready, the shipper does business largely in the dark and is obliged to rely implicitly upon the honesty and good judgment of his consignee.

If all mankind were honest to the highest degree and equally qualified as to judgment, business methods might be simplified to an extent that would give us ideal conditions. Unfortunately we have not progressed so far in the moral scale, and it is still necessary for honest business men to protect themselves against those who are less scrupulous. If every commission man who sells fruit and truck for Southern shippers could be depended upon to consider his constituents' interests as his own, the present system might be satisfactory to all concerned. But under existing conditions the shipper is entirely at the mercy of his agent in the distant market, and often finds himself out of pocket on his shipments. We have in mind numerous instances of heavy loss that has been occasioned to shippers by the carelessness and dishonesty of commission men, and we are glad to say that we have knowledge of several cases in which shippers have beaten dishonest agents at their own game.

There is neither reason nor justice in the present system of handling Southern fruits and vegetables, which forces the producer to furnish all the capital, pay all the expenses, take all the risks, and if there be any loss stand it all. Because it requires no capital and no credit beyond office rent, the commission business attracts men of small calibre and limited integrity, who prey upon shippers and give a bad name to the business. We do not wish to be understood as condemning commission men as a body, but we do desire to express the conviction that the abuses which unscrupulous men are enabled to perpetrate under existing methods are a warrant for condemning the entire system of doing business at the shipper's risk and upon his capital. There are honest men and large firms whose dealings are in every way honest and reputable, but they are the result of personal qualities, and not the product of the system.

We are pleased to note a tendency towards modified methods which promises to be of benefit to the shippers. A good many firms are now accepting goods at the point of shipment instead of upon arrival at their destination, and the risk is thus more equally divided between the producer and the seller, as it should be. An increasing proportion of Florida fruit and truck is being sold at the shipping point to firms whose responsibility begins then and there, and a considerable amount of this season's early vegetables has been sold outright in the field. In every instance producers have made more money by doing this than by consigning to distant commission houses. The more general this method becomes the better satisfied all parties concerned will be.

CORRESPONDENCE

The Discovery of Bauxite in the South.

CEDARTOWN, GA., May 6.

Editor Manufacturers' Record:

In the MANUFACTURERS' RECORD of May 5 your article on "Bauxite in the South" states that bauxite was first found in Pike county, Ga., in 1887, meaning that this was the original discovery in the South. This is incorrect, and as there has been some discussion as to who should have the honor of the discovery, I will state that Edward Nichols, general manager of the Ridge Valley Iron Co., Floyd county, Ga., and at the same time president of the Republic Mining & Manufacturing Co., had discovered bauxite near the furnace in Floyd county, Ga., and had made determinations in his laboratory earlier than 1886.

H. N. VAN DEVANDER.

Southern Immigration.

JOPLIN, MO., May 5.

Editor Manufacturers' Record:

The plan for stimulating Southern immigration as proposed in the MANUFACTURERS' RECORD of April 21 is certainly a move in the right direction, and should have the aid and encouragement of every one interested in the welfare of the South.

The South needs the class of immigrants which have built up Minnesota, Wisconsin and Michigan, and with its fine farming lands there is no reason why it should not secure them. The older States are filling up, and the better class of immigrants are now looking for less settled territory away from the rigors of winter and cyclones of summer.

Some time ago the writer had occasion to travel through the South, and while there acted as correspondent for a Scandinavian paper. The articles brought letters from all parts of this country and many places in Europe asking for more information regarding the country, particularly northern Alabama and Mississippi. This shows that there will be plenty of people to come if information regarding the South can be made to reach them.

This result could be satisfactorily accomplished by organizing in each State an immigration association and soliciting funds from land owners and business men, and also supply money from the State treasury if need be. This association could send to Europe an agent who could disseminate information as to his State, and when there was enough interest aroused organize a colony. Once established in a satisfactory place, there would be no difficulty in securing plenty more from the same country.

The World's Fair will attract many people here this summer and railroad rates will be low, so the South should make an effort to draw as many visitors as possible, and in this way increase the knowledge of its resources.

E. HEDBURG.

News Items from Alexandria.

ALEXANDRIA, IND., May 8.

The past week has been a very busy one and items of news are numerous, but a few only will serve to show how matters are moving.

The United Glass Co., whose plant is now under construction, and which will employ 1400 hands, has drilled its gas well, striking a flow of 9,000,000 feet of gas a day. This is the second largest well ever drilled here, most of them running from 6,000,000 to 8,000,000 feet a day.

The De Pauw Window Glass Works is now largely adding to their force, 125 new men having come on one train last Saturday; others will follow at once. The plate-glass, the window-glass and the bottle-glass works run by the several De Pauw companies will, when all the buildings are completed, employ in the aggregate about 3200 hands, making this, with the other

glass works here, the greatest glass-manufacturing city in the world.

As rapidly as any part of their plants is completed it is started up and the work of extension to the full size intended goes right on.

The Lippincott Glass Chimney Works is now turning out 75,000 glass chimneys a day, and as though this were not enough to satisfy the demand, the company will double its force and its output.

The officers of the Big Four Railroad, a part of the Vanderbilt system, were in town last week preparing for active work on the new depot to be built on Broadway, and also starting work on switches to some of the new factories. A large force is now building a switch to the site of the New Albany Rail Mill, which is to start up in September with 1000 hands and to employ 2200 within twelve months.

The grading and paving of Broadway, the future great business thoroughfare of Alexandria, as well as of other streets, has commenced, and bids have been invited for the fine hotel to be built on that street, and the contract for the passenger depot will probably be awarded this week.

All interest is now centering in the great land sale on the 9th, 10th and 11th of May. Those who are interested in learning full particulars about Alexandria will receive a very handsome folder map on application to the Alexandria Company.

GENERAL NOTES.

Brief Mention of Various Matters of Current Interest.

ON May 15 bids will be opened at Florence, Ala., for furnishing all material, labor and appliances for constructing a masonry lock at Colbert shoals, in the Tennessee river, just below Florence. There are \$416,000 available for the work.

THE plant of the United States Car Co. at Anniston, Ala., is pushing forward in its preparations to build the 1200 cars ordered by the Louisville & Nashville Railroad. About 400 men will be employed within a week or so, and later on this number will be largely increased.

DURING next month an election will be held in Macon, Ga., to decide upon issuing \$200,000 in bonds of \$1000 each, bearing 5 per cent. interest. The bonds will run for thirty years, and are not to be sold for less than par. The proceeds are to be used to construct a complete sewer system in the city.

THE brick plants at Bessemer, Ala., have been doing a heavy business during the past few months, and are now greatly pushed with orders. The fire-brick company has just shipped forty carloads of fire-brick to Cuidad de Porfirio Diaz, Coahuila, Mexico, for use in the erection of the coke ovens in the Hondo coal district.

SOUNDINGS which have been taken on the Galveston (Texas) bar show that the depth of water is steadily increasing, owing to the scouring action caused by the jetties. Recently the steamship Leonora, drawing sixteen feet one inch, crossed the bar, the tide being about average. On one day last week the soundings showed seventeen feet clear.

LAST week the finishing capstone was put in place on the great dam at Austin, Texas. This is just three years from the date when the city voted for the bonds with which to carry on the work. The city council and members of the board of public works were present on the occasion, but other than an informal address no ceremonies were observed.

THE Merrill-Stevens Engineering Co., of Jacksonville, Fla., has closed a contract with the Beach & Miller Line for the con-

struction of the hull of a new steamer to run between Jacksonville and Crescent City, Fla. The steamer will be fitted up complete at the yards of the Merrill-Stevens Company at Crescent City. The boat will have accommodations for 150 or 200 passengers and is expected to make about twelve knots.

THE brick plants at Jacksonville, Fla., are using a fine plastic clay which, it is said, produces a brick of remarkably even texture and good appearance. One yard, that of Greeley, Rollins & Morgan, has a capacity of 70,000 bricks daily and employs seventy-five men. The Alen, owned and operated by F. W. Dennis, has a capacity of 25,000 bricks daily, and still another, owned by the same firm, has a capacity of about 15,000 bricks.

THE East Tennessee Land Co., which established the town of Harriman, Tenn., and which has large interests in and around Harriman, held its annual meeting recently and elected the following board of directors: A. W. Wagnalls, Ferd Schumacher, J. B. Hobbs, Wm. Silverwood, A. H. Gillingham, C. D. Greenlee, Frederick Gates, L. S. Freeman, A. A. Hopkins, W. H. Russell, C. C. Funk. John Hopewell, Jr., who served on the board of directors, has resigned on account of ill health.

THE Tivola Land & Orchard Co., which is located on the Georgia Southern & Florida Railroad, thirty miles from Macon, Ga., will have a capital of \$50,000, and will develop 1800 acres of land in that vicinity. It is proposed to divide the property into 50-acre tracts, to be planted with peach and pear trees. Fruit-growing on a large scale will be attempted. Another project is a crate factory to cost \$10,000 to be located on the property. The interested parties are Ohio people.

IN view of the success attending the experiments in tobacco-raising at the Calhoun experiment station in Louisiana, a land and tobacco company has been organized at Monroe, La., for the purpose of acquiring large tracts of land near Calhoun and dividing it into farms of forty and sixty acres and settling immigrants upon it to raise tobacco, which will be handled by the company. The farms will be sold at a nominal price. At the meeting of the company 1200 acres of land and \$750 cash were subscribed for stock.

IT is stated that there is a project on foot to erect a large tannery at New Orleans. The advantages offered there are an equable temperature and an abundance of raw material. About \$2,000,000 of hides are annually received in the city. Investigations have been made relative to the use of the canaigre root, found in Central America and Mexico, and it is said that this can be used satisfactorily as a substitute for oak bark. It is largely through the efforts of G. C. Power, of the Illinois Central Railroad, that this matter is being considered.

THE Texas building at the World's Fair will be completed within thirty days and ready for visitors. A carload of banana and magnolia trees have been received and will be planted around the building. The exhibits, most of which are on hand, are being put in place as rapidly as the workmen on the building finish their work, and indications are that the display will be equal to that of any State represented. The delay in completing the building has been owing to the tardy action of the legislature in appropriating funds for the purpose.

PROMINENT capitalists of New Orleans and St. Louis are considering the propriety of establishing a large plant in New Orleans for the manufacture of a high grade of white lead and linseed oil. The plans for the erection of the plant are nearly per-

fected, and arrangements have been completed for the formation of a stock company with a paid-up capital of \$200,000, nearly all of this amount having been subscribed. The St. Louis people have taken a large part of the stock, but the controlling interest remains in the hands of the New Orleans capital interested. A charter will shortly be formulated and applied for.

THE Pecos Company of Texas and New Mexico has filed articles of incorporation in the office of the secretary of state at Trenton, N. J. The purpose of the company is to aid and promote enterprises for the development and exploration of agricultural and mineral lands or other resources, natural or artificial, in the valley of the Pecos river in New Mexico or Texas. The company will equip railways, telegraph, telephone, electric, gas and water lines. The principal office in New Jersey will be in Jersey City, while the main office will be at Colorado Springs. The incorporators are James I. Hagaman and Thomas H. Edsall, of Colorado Springs, and Charles A. Otis and Richard J. Boths, of New York.

A MEETING of the stockholders of the Merchants' Steamship Co. of Florida was held at Jacksonville last week. An election of officers was held, resulting in the selection of the following gentlemen: J. H. Colvin, vice-president; C. E. Garner, secretary; John G. Christopher, treasurer and general manager; directors, T. V. Cashen, J. H. Bugbee, J. G. Christopher, J. H. Colvin, W. J. Harkisheimer, N. S. Wightman and C. E. Garner. The election of a president was deferred until the next meeting. Reports for the year were read, and the line reported in a flourishing condition. A committee of three was appointed to take up the matter of building another steamer and solicit subscriptions among the orange growers for building a suitable boat for the trade.

AT the meeting of Georgia fruit-growers and representatives of various railroads, held at Fort Valley, Ga., last week, each railroad made liberal offers to secure the fruit business for the year. The Louisville & Nashville road has had a large number of improved refrigerator and ventilated cars constructed for this trade, and offers them without other charge than the refrigeration necessary to insure the safe arrival of the fruit. By this arrangement shippers would save nearly \$40.00 per car over the rates in force last year. The East Tennessee, Virginia & Georgia road offers the same inducements for the Eastern market. The Richmond & Danville road offers refrigerator cars, but with a charge of \$90.00 per car additional freight. The Atlantic Coast Line, in connection with the Central road, offers quick transportation, but will not furnish refrigerator cars. It is likely that the Seaboard Air Line will come forward with an offer for some of the Eastern business.

AT the annual meeting of the Chamber of Commerce of Knoxville, Tenn., held in that city on May 2, the secretary, J. W. S. Frierson, read his report of work accomplished during the year. This shows that the efforts of the organization have resulted in benefiting the city in many ways. The following board of directors was elected: Dr. R. L. Teasdale, E. E. McMillan, C. S. Newman, H. M. Aiken, M. L. Ross, J. W. S. Frierson, W. T. White, T. L. Moses, Judge S. Logan, Charles Dawes, C. Aebli, R. H. Hart, W. F. Smith, F. A. Moses, S. C. Roney, J. A. Henson, J. E. Chapman, John Bane, J. W. Borches, D. B. Bean, W. F. Maxwill, Edwin Kennedy, Charles F. Vanderbilt, F. B. McCrary and J. T. Garratt. The officers for the ensuing year are as follows: President, Dr. R. L. Teasdale; first vice-president, E. E. McMillan; second vice-president, C. S. Newman; treasurer, H. M. Aiken, and secretary, J. W. S. Frierson.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on page 280.]

A Cotton Mill for Americus, Ga.

The citizens of Americus, Ga., and Sumter county held a mass-meeting on the 4th inst. to take steps looking to the erection of a \$50,000 cotton mill in Americus. There was a good deal of enthusiasm manifested at the meeting, and the success of the enterprise is practically assured. The plan adopted for the payment of subscriptions allows stockholders to pay in \$2.50 per month per share for forty months. An eligible site on the Central Railroad has been donated, and work will probably begin as soon as the charter is granted the company and the first payment of stock has been made. The company just started will organize under the name of the Sumter Cotton Mills, and will be managed by a board of directors selected from the best business men of Americus. The charter has been applied for by E. W. A. Buttman, A. S. Brown, F. Levi, Altamont Moses, W. A. Bowman, Marion Moise, Abe Rytenburg, Wm. Graham and E. E. Rembert. The capital stock is placed at \$200,000, and organization will be perfected as soon as \$50,000 is subscribed. Books of the stock have been opened, and within a few hours \$5000 was raised. Committees are now soliciting in both Americus and Sumter county, and indications are that the amount required for success will be obtained this week.

Cotton Market.

NEW ORLEANS, La., May 8.

Editor Manufacturers' Record:

The cotton world sees a visible supply of American of 3,100,000 bales. To this supply must be added what will come into sight of this crop between now and September 1, and from this total must be deducted what the world will take for consumption out of visible supply. By September 1 estimates of the coming crop will be larger or smaller than 7,500,000, according as crop conditions improve or depreciate between now and that date. On September 1 last year the general crop estimate was about 7,750,000, so that there is considerable difference between crop estimates on that date and the eventual outturn. If the amount carried over of American on September 1 should be 1,500,000 bales and the general opinion about new crop shall be 7,500,000, it will give a prospective supply for another season of 9,000,000 bales, against a prospective supply on September 1 last of about 10,000,000 bales, because the visible supply of American on September 1 last year was 2,100,000. How much smaller crop, therefore, than a prospective supply of 9,000,000 on September 1 next the world may base its operations upon will depend upon how much smaller than 7,500,000 the new crop promises to be. Unless the production per acre the coming season should exceed the average of the six lowest and the six highest years' production of the last twelve, which was 183 pounds to the acre, there is no probability, and hardly a possibility, that the next crop can exceed 7,500,000, because if we take the average of 19,000,000 and 20,000,000 acres it gives a total amount of lint that, divided by 480 pounds, cannot produce a crop of 7,500,000 bales. We must first get into our minds an approximate estimate of the acreage of the coming crop. What the production per acre may be can only be determined by January 1 next. It is not likely to be 180 pounds, as the conditions so far of the crop are not favorable to large expectations of that character. The present crop is practically in sight, and there can be no question but that a considerable amount of cotton must be bought before September 1 by spinners everywhere—in

Europe, anyhow, if not in this country. There is no longer any distress among spot holders, and we anticipate a better condition of things, unless, as everyone realizes, crop conditions should become most favorable and overcome the loss in condition so far.

ATWOOD VIOLETT & CO.

CLOSING PRICES OF COTTON FUTURES.

Months.	New Orleans, May 10.	New York, May 10.	Liverpool, May 10.
May.....	7.54	7.55	4 14-64
June.....	7.50	7.64	4 16-64 sel.
July.....	7.61	7.75	4 17-64 buy
August.....	7.65	7.84	4 18-64
September.....	7.72	7.91	4 20-64 buy
October.....	7.77	7.98	4 21-64 sel.
November.....	7.82	8.05	4 22-64 buy
December.....	7.88	8.11	4 23-64
January.....	.....	8.17	4 24-64

Tone of market. Quiet & firm. Steady. Quiet & steady.

CLOSING PRICES OF SPOT COTTON.

Grade.	New Orleans, May 10.	New York, May 10.	Liverpool, May 10.
Middling.....	7 5/8	7 13-16	4 5-16
Low middling...	7 5-16	7 3/8	4 3-16
Good ordinary...	7	6 11-16	4 1-16

Tone of market. Firm. Dull. Easier.

Schulze Pneumatic Cotton Elevator.

The Schulze patent pneumatic cotton elevator, manufactured by the Kingsland & Douglas Manufacturing Co., of St. Louis, Mo., is one of the latest improvements in this class of machinery, and is the result

presents a handsome result, a net profit being shown of \$26,000, which amount is over 18 per cent. on the money invested. The directors have decided, in lieu of declaring a dividend, to invest this money in putting in additional machinery to increase the plant's capacity. The following directors were elected for the ensuing year: T. B. Franklin, J. S. Billups, J. D. Morgan and S. Selig. The officers are Harrison Johnston, president; Col. W. C. Richards, vice-president, and William Johnston, secretary and treasurer. Fair prices and a ready market have always been found for this mill's output ever since it was started, and it could probably sell four times as much as it is now turning out.

Southern Textile Notes.

THE Florence Mills at Forest City, N. C., intend to build a number of cottages for its operatives.

THE Patterson Manufacturing Co., mentioned in our last issue as organized at Concord, N. C., intends to build its mill at China Grove.

THE new cotton mill to be built at Newton, N. C., by Messrs. Yount & Shrum will be known as the Carolina Cotton Mills. Two thousand spindles will be installed and yarns manufactured.

THE tenth annual meeting of the stockholders of the Newberry Cotton Mills, of Newberry, S. C., was held on the 3d inst. The reports of President McLaughlin and

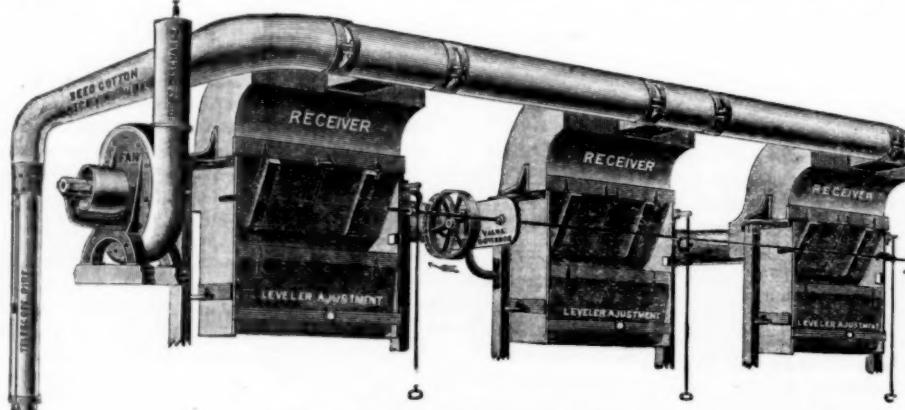
ately begun toward an early commencement of work on the necessary buildings.

THE amount of stock necessary to insure the new cotton mill at Opelika, Ala., has been subscribed, and application for permission to incorporate has been made. When 20 per cent. of the amount subscribed is paid in, a meeting will be called for the purpose of perfecting organization.

THE stockholders of the Charleston (S.C.) Cotton Mill held their annual meeting on the 4th inst. The annual report was submitted and proved most satisfactory to those concerned. The old board was re-elected, as follows: F. A. Silcox, O. H. Sampson, W. P. Carrington, C. A. Wilbur and John C. Wilters. Mr. Silcox was re-elected president; T. J. Hennesy, secretary and treasurer, and Thomas Siddon, superintendent.

THE citizens of Jasper, Ala., recently named Judge J. B. Shields as a committee of one to visit Georgia and the Carolinas to ascertain the cost of cotton factories, their operation, successful conduction and other particulars. The report submitted by him on his return so impressed the citizens that they have inaugurated a movement for a \$250,000 company. Subscriptions to the stock are now being received, and indications point to the success of the enterprise.

AT a meeting of the directors of the Scotland Neck (N. C.) Cotton Mills, held on the 2d inst., the board authorized the



THE SCHULZ PNEUMATIC COTTON ELEVATOR.

of several years' practical experience and study. The great feature about this system is its simplicity. It distributes the cotton as wished and is free from any complication. A receiver being placed on each feeder, no revolving parts are required, and consequently less power is required to operate it. An automatic governor which controls the valve of each receiver keeps each feeder full of cotton.

A Dividend Declared.

The eighth annual meeting of the Darlington Cotton Manufacturing Co. was held at Darlington, S. C., on the 6th inst. The meeting was well attended, and out of 2200 shares 1836 were present or represented by proxy. The president's report for the past year was submitted and gave unusual satisfaction, being one of the most favorable ever received. A dividend of 7 per cent. was declared, which represents only half of the net profits of the mills. The following gentlemen were re-elected to serve for another year as a board of directors: W. C. Coker, J. L. Coker, G. A. Norwood, J. J. Ward, L. Lowenthal, E. K. Dargan, Bright Williams, W. A. Carrigan, J. G. McCall and H. Baer. The president and treasurer, Capt. W. C. Coker, was unanimously re-elected.

A Satisfactory Dividend.

The stockholders of the Tombigbee Cotton Mills, of Columbus, Miss., held their annual meeting on May 8. The report of the company's business for the past year

General Manager McCrary showed that the mill was in a splendid condition. The mills are now paying a handsome dividend, and have bought some valuable real estate during the year on which to build houses for the operatives. In view of the enlargement of the mills the stockholders decided to increase the capital stock from \$250,000 to \$400,000 and put in 15,000 spindles. All the officers of the mills were re-elected as above, with George S. Mower, as secretary.

PLANS for the erection and completion of the proposed Watauga Cotton Mills, at Elizabethton, Tenn., have been completed. Work on the building has commenced, and it is expected to be completed in August. Contract for the entire outfit of machinery was awarded some time ago, and it will be placed in position as the building becomes ready. E. E. Hunter is president of the company; W. P. Dungan, vice-president, and R. L. Graham, secretary and treasurer. The above, together with L. H. Rhudy, Jno. V. Jordan, C. W. Adams and C. E. Graham, are the board of directors.

THE stockholders of the Cheraw Cotton Mills, of Cheraw, S. C., to which a charter was granted recently, held a meeting last week for organization and elected the following directors: H. W. Finlayson, M. W. Duvall, J. A. Watson, A. B. Horton, W. R. Evans, W. F. Stevenson and J. A. Atkinson. A capital stock of \$50,000 is proposed, to be paid for on the instalment plan, and this amount has been fully subscribed. Arrangements will be immedi-

ately begun toward an early commencement of work on the necessary buildings.

THE Modena Cotton Mills, of Gastonia, N. C., have been incorporated for the purpose of spinning and weaving cotton, wool and other textile productions, etc. The incorporators are J. E. Curry, L. L. Jenkins, A. C. Williamson, W. L. Gallant, E. Whitesides, S. M. Morris and B. G. Bradley, and they have placed the capital stock at \$50,000.

THE Opelika Knitting Mills, at Opelika, Ala., were totally destroyed by fire on the night of May 3, causing a loss of \$13,000. It is generally supposed that the fire was caused by incendiaries. The plant is to be rebuilt immediately, and an outfit of new machinery will be ordered in a few weeks. Over 100 operators were employed in the mills.

THE movement at Talladega, Ala., for a cotton mill has assumed sufficient shape to insure its erection, and a complete outfit of machinery has been ordered from Lowell (Mass.) makers. The site has been selected and the plant is expected to be completed by November 1.

THE Holston Woolen Mills, of Salem, Va., are at work on an order from a New York firm for 1,000,000 yards of cassimere.

MECHANICAL.

Grinder and Countershhaft.

Two pieces of machinery which will attract much attention among the many concerns which have use for them are a grinder and countershaft being made by the Norton Emery Wheel Co., of Worcester,

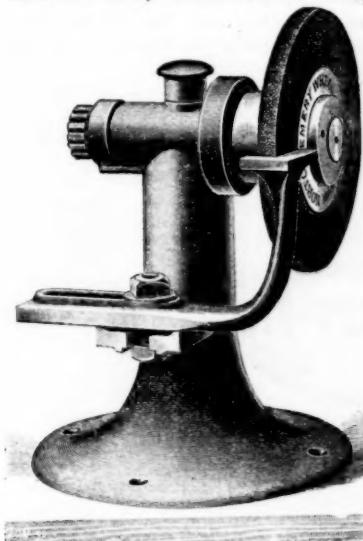


FIG. 1.—GRINDER.

Mass. The grinder costs but \$5.00 net and the emery wheel \$7.50 net. Some of the features of the grinder are a simple rest, adjustable in two directions, ample oil chamber and thorough protection to spindle and bearings from grit, while the waste oil is carried through the centre of

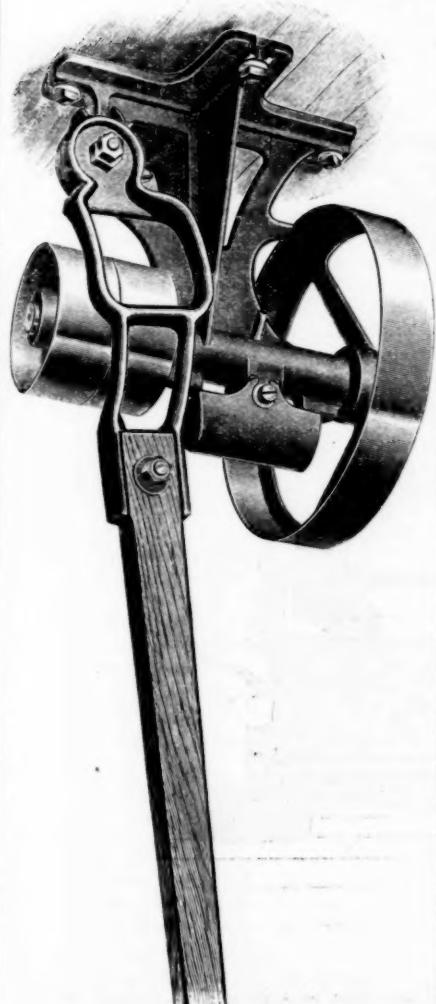


FIG. 2.—COUNTERSHAFT.

the column. The improved methods of construction enable the price of the grinder to be fixed at such a low figure. The grinder weighs twenty pounds, is nine inches high and nine inches in diameter at base. It will carry wheels ten inches in diameter and one inch thick.

The countershaft weighs forty-five pounds and has a shaft one inch in diameter. It has special improvements for conveying and retaining oil, and a belt shipper which does away with all rattling. The pulleys are so accurately balanced that they can be run at a high speed.

Redding Watchman's Electric Register

The Redding electric register shown in the accompanying illustration is being handled exclusively by the Arkansas Electric Supply Co., of Little Rock, Ark. A means of checking a watchman's movements is absolutely necessary both to insure the faithful performance of his duties and to show to insurance companies to secure reduced rates. Many excellent systems have been devised for this purpose, and among those which seem to have the prefer-



REDDING WATCHMAN'S ELECTRIC REGISTER.

ence now are the ones which keep a record on a paper dial, showing the time of the watchman's visit to each point.

Heretofore the records have been marked on the dial by a needle, and sometimes these marks have been indistinct. To obviate this difficulty the Redding system provides a dial on which is printed by steel figures the hour and minute at which each station was visited. The results from this have been highly satisfactory wherever tried, and many first-class warehouses, factories and works are installing the system.

36-Inch Slab Milling Machine.

The accompanying illustration shows a machine designed and manufactured by the Ingersoll Milling Machine Co., of Rock-

ford, Ill., for heavy milling operations, working up to thirty-six inches square and eight feet in length. In general appearance the machine is like a heavily proportioned planer, the arbor being supported by two shifting heads fitted to the cross rail and adjustable so as to support the arbor as close to the cutters as possible, so that as short a cutter arbor can be used as the nature of the work will admit. The cross rail is moved up and down upon the housings either by hand or power, and its movement is indicated in thousandths of an inch by micrometer graduations. The table can be moved by power either way for adjustment at the rate of thirty feet per

minute; it can also be moved by hand. It is spiral geared, and the rate of its movement for feeding can be varied by friction wheel and disk from three-sixteenths of an inch per minute with the slowest cutter speed to five inches per minute at the fastest cutter speed.

The spindle is five and a-quarter inches in diameter with a minimum length of bearing of twenty-five inches. It is driven by gears, in the ratio of twenty-four to one, allowing eight changes of speed. An arbor three inches diameter with an outboard bearing ten inches long is supplied with the machine. Cutters up to fifteen inches diameter and thirty-six inches long can be used on the machine if desired. The driving cone is for a four-inch double belt. Two countershafts are furnished with the machine, each running at a speed of 280 revolutions. The machine will mill at the top of work thirty-six inches high with a six-inch cutter.

The operator can mill with this machine on cast iron, and with the company's patent cutters, thirty-six inches wide, cutting three-sixteenths-inch teeth with a lineal feed of three inches per minute. It is made in the following sizes: Fifteen by fifteen inches by four feet, twenty-two by twenty-two inches by five feet, twenty-four by twenty-four inches by six feet. The machine weighs about 22,000 pounds.

Mexican Notes.

ADVICES from the City of Mexico state that the extension of the Hildago Railway

next in importance below is Tecomula, from which is shipped a large portion of the mahogany which goes out of the republic. This line when completed will form the most direct route from the Gulf to the City of Mexico.

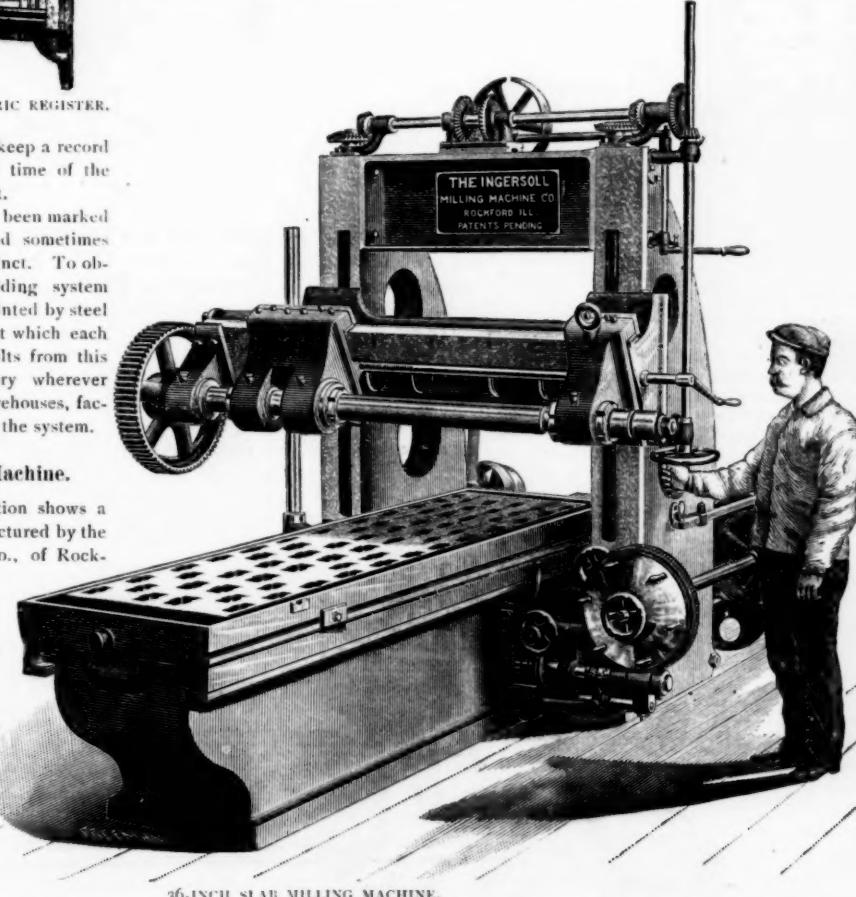
THE earnings of the Mexican Inter-oceanic Railway for the week ending April 7th were \$44,152.12.

GENERAL JULIO M. CERVANTES has been elected president of a Oaxaca syndicate organized with \$1,000,000 capital to engage in coffee culture in that state.

IT is said that extensive and very fine sponge beds have been discovered off the coast of Campeche. A number of wealthy persons are interesting themselves in the matter.

ABOUT 100 prominent merchants in different parts of Mexico are organizing an excursion to visit the World's Fair, and afterward the principal cities of the United States.

THE concession granted by the Mexican government to the Continental Railway Co. on November 9, 1889, has been declared forfeited by President Diaz. The company was to construct six miles of railway between Matamoras and the Guatamalean frontier, following the Gulf coast, touching at the port of Tuxpan and crossing the Tehuantepec Railway, but failed to fulfill their part of the contract with the government. One-half of the money put up by



36-INCH SLAB MILLING MACHINE.

ford, Ill., for heavy milling operations, working up to thirty-six inches square and eight feet in length. In general appearance the machine is like a heavily proportioned planer, the arbor being supported by two shifting heads fitted to the cross rail and adjustable so as to support the arbor as close to the cutters as possible, so that as short a cutter arbor can be used as the nature of the work will admit. The cross rail is moved up and down upon the housings either by hand or power, and its movement is indicated in thousandths of an inch by micrometer graduations. The table can be moved by power either way for adjustment at the rate of thirty feet per

the company as a guarantee deposit will be returned to it, while the other half will remain for the benefit of the public treasury.

THE new stamp law went into effect in the City of Mexico on the 1st inst. The law provides that the stamps in payment of taxes shall be of three classes—first, the common, with or without stock; second, those destined for imports on merchandise, and third, those in payment of taxes. This law, which is causing much discussion throughout the republic, will extend its operations to many classes of documents hitherto exempted. The stamp tax has been largely increased in a number of cases.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department, on page 280.]

Lumber Directory.

Readers of the MANUFACTURERS' RECORD who may be in the market for lumber of any description are recommended to the directory of Southern lumber manufacturers and dealers which appears among the advertising pages.

Meeting of Alabama Lumber-Mill Men.

A convention of representative lumber-mill men met in Montgomery, Ala., on the 4th inst. The object of the convention was to discuss some important reforms in the lumber trade, the principal one being to change "face count" in the dressed lumber trade to "strip count" on all lumber shipped from the State and the northwestern part of Florida. W. W. Smith was called to the chair and F. Stollenwerck appointed secretary. The discussion on the reform movement, "face and strip count," was then entered upon, lasting for some time, with considerable opposition shown to the new movement. The question was referred to a committee of five, Messrs. Wager, Wadsworth, Kaul, Skinner and Marbury, with instructions to report as soon as possible. The committee, after their session, reported a resolution that "strip count" be adopted, allowing three-quarters of an inch for working lumber, all charges to be made on the original board from which stock is worked. An amendment was offered to the resolution to strike out "allowing three-quarters of an inch for working lumber." The amendment was voted down by a vote of six to five, and the original resolution was adopted. Several parties present objected to signing the agreement based on the resolution without consulting their partners, and a resolution was adopted to meet in Montgomery on the 19th of the present month, when a permanent organization will be formed and the reform movement prosecuted. The following resolution was adopted:

Resolved, That it is the sense of the Alabama lumbermen, in convention assembled, that it will be conducive to the strength of the Southern Lumber Manufacturers' Association east of the Mississippi river that the office of said association be moved to Memphis, Tenn., thereby placing the secretary nearer to every point in the yellow-pine belt.

Ware, J. R. Caldwell, W. W. Wadsworth, John L. Kaul, W. B. Dickerson, J. H. Marbury, E. S. Bliss, J. D. Hand, C. S. Brown, F. M. Frederickson, F. Stollenwerck and W. E. Sistrunk.

A Double-End Tenoning Machine.

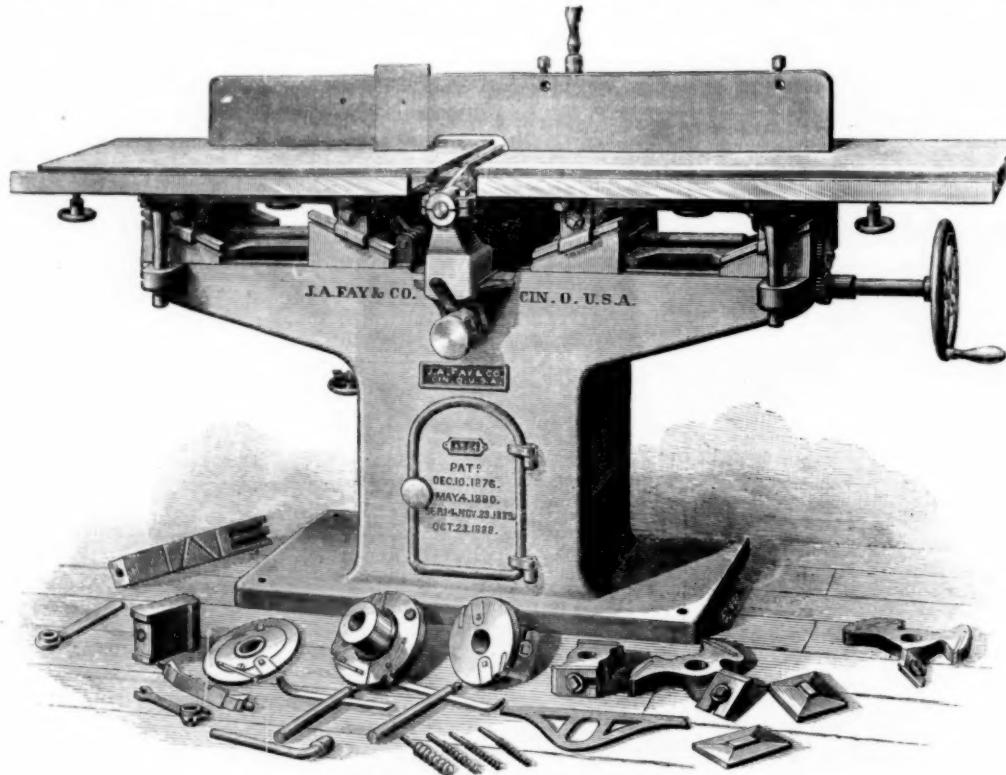
The accompanying illustration shows one of the double-end tenoning machines made by the Buss Machine Works, Grand Rapids, Mich. It is now generally conceded that

and is driven by a double gear, so that the same is very accurate and even. There are three changes of feed, and the same is regulated by a tightener which is in a convenient place to the operator for starting and stopping the same. The chain is made with a great deal of accuracy, as every link is milled so as to conform to an exact duplicate size, the same being connected by steel pins.

The frame is extremely heavy and can

turbers, etc., as it saves so much manual labor.

It will plane out of wind, surface straight or tapering, rabbet door-frames, etc., rabbet and face inside blinds, joint, bevel, gain, chamfer, plow, make glue-joints, square up bed-posts, table-legs, newels, etc., raise panels, either square, bevel or ogée, stick heads, work circular molding, rip, cross-cut, tenon, bore, rout, etc. All the different functions of the machine are secured



NEW NO. 2 SOLID FRAME VARIETY WOODWORKER.

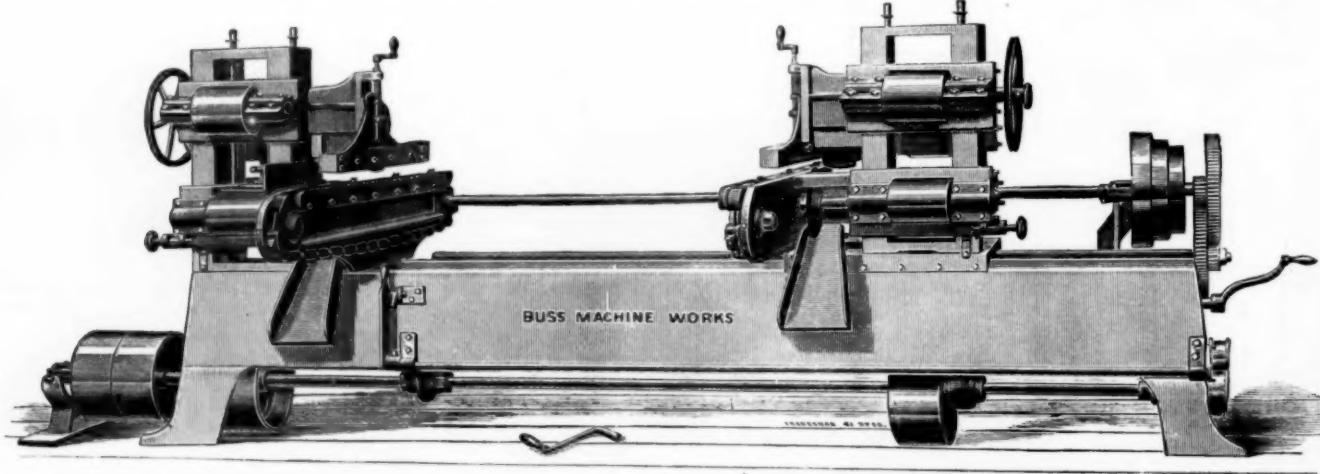
a double machine working at both ends actually does more than twice the work of a single machine, and this is satisfactorily shown by the Buss patent.

The cut-off saws are placed on the front side of the machine and on the under side, so as to work in the same way as an ordinary saw bench, the work being cut off before it is tenoned. The tightener pulleys are above the cut-off saws, and so arranged

to withstand all strains. There is no chance for it to spring. The right-hand head-block is adjustable to work of any size from six and one-half inches to six and one-half feet, and the tenons themselves can be made any size required. Work twenty-six inches wide can be tenoned on the machine.

All of the parts are perfectly fitted and adjusted, and the invention is so constructed

by the use of two tables, thereby effecting a saving of time in making the adjustments. The tables are made with grooves to receive the gaining frame, and are made continuous by filling pieces connected with them when so used. For sawing, a short supplemental table is inserted between the other two, making a continuous saw-table. For these purposes, and for paneling, the tables are arranged so that both can, at the



DOUBLE END TENONING MACHINE.

Letters from extensive lumber-milling concerns were received, and a telegram from the Mississippi State Association pledging its support to the reform movement. The following companies and firms were represented at the convention: Elmira Lumber Co., Elmore; Sullivan Lumber Co., Mobile; McMillen Lumber & Pine Barren Co., Pensacola; F. L. Wager, W. W. Smith, J. F. Maul, E. H. Skinner, R. A.

as to give always an equal tension on the belt; the cut-off saws, being driven by the same belt, gives them plenty of power. There is an improved pressure bar for holding the work down, so that any unevenness in the way of thickness is readily accounted for and the work always held in a rigid manner until it has passed through the cutters. The feed, which is continuous, is operated from a shaft on the back of the machine

as to be very compact, considering the labor required of it.

A New Woodworking Machine.

The accompanying illustration is of the new No. 2 solid frame variety woodworker which the J. A. Fay & Egan Co., Cincinnati, are turning out. It is extremely valuable to carpenters, pattern-makers, wagon, carriage and furniture manufac-

same time, be adjusted in a vertical line for varying the depth of cut.

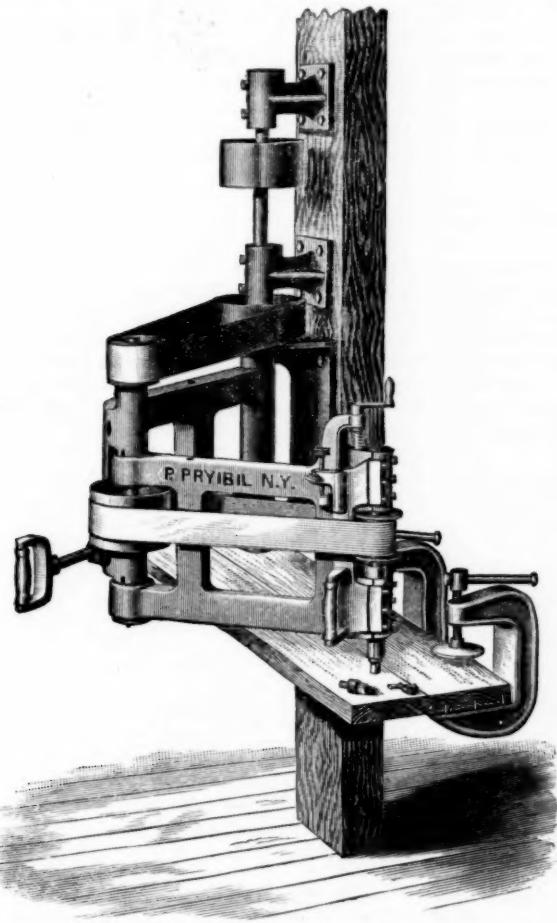
The tables are each made of iron $36 \times 19\frac{1}{2}$ inches, are planed perfectly true and have independent vertical and lateral adjustments. The arbor is of steel, one and seven-sixteenths inches in diameter, and revolves in three bearings supported on the column. The bearing on the front side of the machine is planed in a seat, the height

of which to the centre of the arbor is equal to one-half the diameter of the largest head to be used. It can be detached so as to use different heads, thus giving greater stability to the arbor. The fence forms a part of the forward table, and always maintains its proper position in relation to the knives. A shop number is attached to each machine, reference to which in correspondence will identify the class of the machine and the style of its construction. If the countershaft is placed a distance of six feet from the cutting-spindle a belt is required fifteen feet four inches long and five inches wide.

String Routing Machine.

The accompanying illustration shows a string routing machine manufactured by P. Prybil, 508 to 520 West 41st street, New York, and designed for letting in risers and treads of steps.

the machine. The form is placed upon the top of it and secured firmly by means of two clamp screws provided for the purpose. The cutter is then fed in, guided by the form, and cuts out for the riser, tread, nose and wedges. Different runs and right and left are all produced by the same form. It is well, when possible, to have a table nearly twice as long as the strings, and, if the latter be very heavy, to insert rollers in it. To save room the table is frequently placed about seven feet above the floor, the operator standing upon a platform. The pulley on upright shaft is eight inches diameter, four inches face, and should make about 1160 turns per minute, giving the cutter 6000 turns. Countershaft generally has an 18-inch pulley for a three-and-a-half-inch belt, and nine-inch loose and tight pulleys for a four-inch belt. It should then make 515 turns per minute. Hangers and loose pulleys are self-oiling.



STRING ROUTING MACHINE.

Two swinging arms are swiveled to each other and to a bracket fastened to a post or wall. A dovetail cutter is carried at the end of the second arm, and can be moved freely in any direction by means of two handles fastened to the two arms. The handles are so placed that the operator is always able to apply his strength to the best advantage in feeding the cutter to the work.

The arms being of hollow or tubular section, are light but strong, and owing to this fact and to the wide spread of the swivel bearings the machine is very light and easy to handle, although very powerful and stiff. The spindle has a vertical adjustment to regulate the depth of cut, and is provided with an adjustable stop.

Only two forms of patterns are required, one for heavy and one for light steps, and as the part that works against them does not revolve, they need not be lined with metal. These are made by the user to conform to his practice, and are usually constructed of three thicknesses of hard-wood glued together with the grain crossing. The operation is as follows:

The string piece is marked out in the usual manner and laid upon the table of

Southern Lumber Notes.

THE Shield Lumber Co. has been organized at Middlesborough, Ky., to deal in yellow pine. Geo. W. Albrecht is president; John Morrow, secretary; C. T. Adams, of Asheville, N. C., vice-president, and F. Briant, treasurer.

MESSRS. LAFONT & EHRMAN'S new oak stave factory at Monroe, La., is nearing completion and will soon be in operation, employing from seventy-five to 100 men. From 15,000 to 20,000 staves are being received daily and will be made complete for shipment to Bordeaux, France.

THE Reliance Lumber Co., of Beaumont, Texas, has resumed operations after a shutdown of about ten days, owing to lack of logs. A stock of logs amounting to about 5,000,000 feet has been purchased from the Yellow Pine Tram & Lumber Co., and they will run the Reliance mill a couple of months.

CHARTER has been granted to the Crowley Lumber & Building Co., of Crowley, La., with the following incorporators: T. J. Toler, Preston S. Lovell, Gus E. Fontenot and W. W. Duson. The company has a capital stock of \$14,000 and will manu-

facture lumber, sash, blinds, doors, etc., succeeding to the business of Fontenot & Toler.

THE Surry Lumber Co., of Dendron, Va., has commenced preparations for rebuilding its lately-burned mill.

THE North Carolina Lumber Co.'s new mills, near Tillery, Halifax county, N. C., are about completed and will be put in operation shortly.

A FINE tract of timber land near Newton, W. Va., is to be developed by N. B. McCarthy, who has bought it.

THE property of the Warren Lumber Co. was sold at Woodville, Texas, on May 2 to W. E. Adams, trustee, for \$5100.

A STANDARD-GAGE logging road is now being constructed by the Donaldsonville Lumber Co.

CLEARFIELD (Pa.) parties intend to erect saw mills in Washington county, Ala., to cut the timber on a tract there which they have recently purchased.

MESSRS. WM. CARLISLE & CO. are building a new mill of 40,000 feet capacity daily at the end of their logging road, about twelve miles from Cotton Belt, Ark.

THE Tyler County Lumber Co.'s mills were sold at Woodville, Texas, on May 2 for \$4250. S. B. Cooper, trustee, for the Galveston & Western Railroad, was the purchaser.

CONTRACT has been let for furnishing the equipment of machinery for the Cape Fear Lumber Co.'s new mill at Wilmington, N. C. The Stearns Manufacturing Co. secured the order.

LATELY J. C. Williamson, of Glen Alum, W. Va., shipped to Ironton, Ohio, four 12-foot poplar logs that measured 5429 feet of lumber.

MR. H. S. WHITE, the owner of extensive tracts of timber lands on Mate creek, on the Norfolk & Western, intends to build several saw mills. He will locate his plants in Logan county.

MESSRS. JOS. WHITED & CO. have built a new stave and heading factory at White Bluff, Dickson county, Tenn. Operations have commenced.

THE FIRMS of Fetter & Albright and the R. B. Cotter Lumber Co., of Louisville, Ky., manufacturers and wholesalers of lumber and boxes, have been succeeded by the Beargrass Lumber Co., to which charter has just been issued. J. R. Fetter is president; W. C. Hall, Jr., secretary and treasurer, and S. D. Albright, manager.

CONTRACT to furnish the doors, sash and blinds for the new cotton mill now building in Statesville, N. C., has been let to the Morganton Manufacturing & Trading Co.

MR. W. W. THOMPSON has secured contract to supply the Baltimore & Ohio Railroad with 100,000 railroad ties during the summer. They will be cut from Senator Camden's lands on the Gauley river in West Virginia.

THE shipments of lumber from the port of Fernandina, Fla., during the month of April, as reported by the collector of customs, were as follows: Lumber, coastwise 6,961,565 feet, and foreign 260,687; cross-ties, coastwise 56,977 feet, and foreign 10,069 feet; shingles, 140,750—total 7,430,048 feet.

MESSRS. WOOD BROS., of Wheeling, W. Va., have completed their new mill and have placed in it the machinery of their old plant.

MESSRS. LORIN STEWART and George A. Pringle, of Jackson C. H., W. Va., have decided to build a woodworking factory and put in a small planing mill. They will saw ties and spokes and small stuff generally.

A REPORT is current that the Standard Oil Co. has purchased a tract of land at Bluefield, W. Va., upon which it intends erecting a large cooperage plant.

LUMBER MARKET REVIEWS.

Baltimore.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, May 11.

During the week under review the lumber and timber market has been quiet, with the volume of transactions light, and values barely steady for the most desirable stuff. Receipts of North Carolina pine have been heavy, and air-dried lumber is in liberal supply, with prices easy and lower. Retailers and millmen are only buying to supply immediate necessities, and strong inducements will not effect sales at the moment. Kiln-dried North Carolina pine is in good demand, and as this class of lumber is all sold before arrival, it is not strictly on the market, except occasional cargoes which are sold outside the association. The demand for kiln-dried stuff from first hands is increasing, and orders are coming in freely at the figures current today. Cypress lumber is in moderate demand, and values steady. White pine is moving in moderate sized lots, and stocks are ample for the present inquiry. In hardwoods the market is firm for all desirable stocks, which are generally light and rather broken. There is a fair business reported by box factories and planing mills, and most of them report orders as fairly liberal at remunerative prices.

The following list represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.	
5-4x12 No. 2, kiln dried	\$10 2500
5-4x12 No. 2, " "	17 7500
4-4x10 No. 1, " "	19 7500
4-4x12 No. 1, " "	20 7500
4-4 narrow edge, No. 1, kiln dried	17 2500
4-4 wide edge, " " "	21 7500
6-4x8, 10 and 12, " " "	23 2500
4-4 No. 1 edge flooring, air dried	15 0000 15 50
4-4 No. 1 edge flooring, " " "	12 0000 12 50
4-4 No. 1 12-inch stock, " " "	16 5000 17 00
4-4 No. 2, " " "	12 5000 13 50
4-4 edge box or rough wide	9 0000 10 00
4-4 " " (ordin' y widths)	8 5000 9 50
4-4x12 " " "	10 5000 11 00
7/4 narrow edge	6 0000 7 00
7/4 all widths	8 0000 8 50
7/4 10x16 wide	8 5000 9 50
Small joists, 3/4—12, 14 and 16 long	8 0000 9 50
Large joists, 3—16 long and up	9 5000 11 00
Scantlings, 2x3—16 and up	9 5000 11 50

WHITE PINE.

1st and 2d clear, 4-4, 5-4, 6-4 and 8-4	48 5000 51 50
4-4 clear, 4-4, 5-4, 6-4 and 8-4	43 0000 44 00
Good edge culls	14 5000 15 50

Good stock

CYPRESS.

4-4x6, No. 2

4-4x6, 16 feet, fencing

4-4x6, rough

4-4 rough edge

4-4 edge, No. 1

4-4 No. 2

HARDWOODS.

Walnut

4-4, Nos. 1 and 2

5-4, 6-4 and 8-4

Nos. 2 1/2 and 3 1/2

Newell stuff, clear of heart

Culls

Oak.

Cabinet, white and red, plain sawed

4-4, 5-4, 6-4 and 8-4

Quartered white, 1 and 2 quality, all

figured, 6 in. and up wide, 4-4

Culls

Poplar.

Nos. 1 and 2, 3/4

Nos. 5, 6 and 8-4

In yellow pine cargoes, log run

stock

Culls

SHINGLES.

Cypress, No. 1 hearts, sawed, 6x20

No. 1 saps, sawed, 6x20

No. 1 hearts, shaved, 6x20

No. 1 saps, shaved, 6x20

LATHS.

White pine

Spruce

Cypress

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goes. Receipts of lumber by rail have been large, and reshipments to the North and other points are of considerable volume. There is a demand from new sections of the country every day for North Carolina pine, and the popularity of this wood is rapidly growing to great proportions. The receipts of air-dried lumber are better, and all arrivals are quickly taken at full figures. There is a good inquiry for box boards, and prices on all such grades are firm and hardening. Dressed lumber manufacturers report business as good, and planing mills are all fully employed.

Kiln-dried North Carolina pine lumber, f. o. b. vessel at this port is quoted as follows:

5-4 rift No. 1.....	\$27 500
5-4 rift No. 2.....	16 000
5-4X10 No. 1.....	20 000
5-4X12 No. 1.....	20 500
5-4X10 No. 2.....	15 000
5-4X12 No. 2.....	16 500
5-4 edge No. 1.....	17 500
5-4 edge No. 2.....	13 500
4-4 rift No. 1.....	25 000
4-4 rift No. 2.....	15 000
4-4X10 No. 1.....	18 500
4-4X12 No. 1.....	19 500
4-4X10 No. 2.....	15 000
4-4X12 No. 2.....	15 000
4-4 edge No. 3.....	9 500
5-4 edge No. 3.....	10 500
4-4X8, 10 and 12 culs or box.....	9 000 to 50
4-4X5-4 edge, cul or box.....	8 500

In carload lots \$1.00 additional per thousand on Nos. 1 and 2, and fifty cents additional per thousand on No. 3 and box.

Wilmington.

[From our own Correspondent.]

WILMINGTON, N. C., May 9.

The movement here in lumber has been unusually spirited during the past month, and the outlook for the industry throughout the State is very promising. This city is at present showing up very prominently in the erection of saw-mill plants, and many improvements in various departments of the lumber industry are now in progress. The new mill of the Wilmington Lumber Co., located just south of Kidder's mill, is ready to begin operations, and will be in full blast in a few days, cutting from 35,000 feet to 50,000 feet a day. Pike & Waddell's mill, located just north of Powers, Gibbs & Co.'s fertilizer factory on Northeast river, will soon commence operations. Their buildings are all up, and they are now receiving their machinery. The buildings of the Peregoy Lumber Co. at Hilton are up, and it will be ready to operate about July. The extensive dry-kilns of this company have been in operation for about a year, and it has had its lumber sawn at Evans's mill, opposite Hilton. Ground has just been broken for the big mill of the Cape Fear Lumber Co. on Northeast river. Fifty thousand dollars will be expended in this plant, and it will be a double band mill that will saw up 70,000 feet of lumber per day. The company will put in six 100 horse-power boilers and will have six dry-kilns of the most approved kind. The demand for lumber is greater than ever before, and shipments continue to increase rapidly, while prices for everything desirable are very firm at current figures.

Charleston.

[From our own Correspondent.]

CHARLESTON, S. C., May 9.

There is a very active trade demand for all kinds of lumber from exporters and from local builders, and, in fact, the lumber industry at all interior points is in a very healthy condition. There is considerable inquiry from the West Indies and from South America, and a very active demand from Northern ports. Advices from the various saw-mill sections of the State report nearly all the mills with orders sufficient to keep them running steady for some time to come. Freights on yellow-pine lumber have advanced here, as well as at all South Atlantic ports, and vessels of proper tonnage are reported scarce. The clearances during the week embrace the following vessels: Schooner Ella M. Storer, 300,000 feet of lumber; Celia F., 315,000 feet; A. H. Howe, 335,700 crossties, and steamer Algonquin, 72,000 feet of lumber, all to New York; also per schooner

Mary I. Cook, 280,000 feet of lumber for Baltimore, making a total of 1,302,700 feet for the week. The market closes with prices steady, as follows: Merchantable lumber is quoted \$14.00 to \$16.00 for city sawed and \$12.00 to \$14.00 for railroad; square and round timber, \$9.00 to \$13.00 for railroad and \$8.00 to \$11.00 for raft; dock timber \$4.50 to \$6.50 and shipping \$8.50 to \$10.50. Shingles are in good demand at \$5.00 to \$7.00 per thousand.

EXPORTS OF LUMBER FROM CHARLESTON FROM SEPTEMBER 1, 1892, TO MAY 5, 1893.

Exported to	1892-'93. Feet.	1891-'92. Feet.
New York.....	28,425,731	21,675,948
Boston.....	918,000	
Philadelphia.....	3,055,392	4,974,000
Baltimore.....	1,110,000	1,513,978
Other United States ports.....	1,009,000	1,886,009
Total coastwise.....	34,418,023	30,049,935
Great Britain.....		
Palermo.....		
France.....		
West Indies.....	1,760,360	1,962,300
South America.....		177,000
Nova Scotia.....		
Other foreign ports.....		528,174
Total foreign.....	1,760,360	2,717,474
Grand total.....	36,178,383	32,766,409

Savannah.

[From our own Correspondent.]

SAVANNAH, GA., May 9.

The week under review has shown considerable activity in the lumber industry, and the market has been fairly steady under a good demand. From all milling sections there is considerable business in progress, and the various mills are well supplied with orders. At this port the lumber industry in every department is characterized by considerable snap and vigor, and planing mills and all woodworking establishments are fully employed. The demand from Northern ports continues very steady, with prices firm for all desirable grades and dimensions of lumber. In crossties and staves there is a fair trade demand, and shipments are frequent, while the volume of business is growing steadily. The clearances of lumber during the week were 562,111 feet for New York, 956,000 feet for Baltimore, 372,000 feet for Wilmington, Del., and 30,040 white oak pipe staves for Norfolk. Prices at the close are firm, as follows: Easy sizes, \$11.50 to \$13.00; ordinary lumber, \$12.00 to \$16.50; difficult sizes, \$14.00 to \$25.00; flooring boards, \$14.50 to \$22.00, and ship-stuffs, \$16.50 to \$25.00. In lumber freights vessels for coastwise business are in good demand, and the market is firm at previous figures. The rates from this and nearby Georgia ports are quoted at \$4.62 $\frac{1}{2}$ to \$5.50 for a range including Baltimore and Portland, Me. Steamer rates to New York and Philadelphia are \$7.00, to Boston \$8.00 and to Baltimore \$5.50.

Pensacola.

[From our own Correspondent.]

PENSACOLA, FLA., May 9.

The lumber and timber industry here has been for some time rather quiet and the market somewhat depressed, but during the past week a slight improvement is apparent. The offerings of desirable sawn timber stock are limited and the demand about equal to a moderate supply. Buyers during the week have shown more disposition to bid, and in consequence of this action the whole market has rallied considerably. At the close of business on Saturday quotations on sawn timber at Ferry Pass were on a basis of ten to ten and a-half cents per cubic foot, according to average and quality. There is no demand for hewn timber. Advices from the adjacent milling sections of Alabama represent the lumber industry as quite depressed, and the extremely low price of timber is causing general complaints of hard times. The outlook is not encouraging, and it is said that many mills will shut down during the summer for repairs and wait for better prices. In lumber the

business at this point is good and the demand is general. Clearances this week have included several ports in South America, Mexico and the leading Northern Atlantic ports. Shipments for the week aggregate 1,100,000 feet of sawn timber and 5,110,000 feet of lumber. There is no change to report in lumber freights and rates are firm at previous quotations. To United Kingdom or Continent £4 7s. 6d. to £4 12s. 6d., according to size of vessels, and for South America rates are on a basis of \$12.00 to \$12.50 for Buenos Ayres and \$14.00 to \$14.50 for Rio Janeiro.

Mobile.

[From our own Correspondent.]

MORILE, ALA., May 9.

There is a free movement of lumber and timber at this port and the volume of business keeps up remarkably well. In hewn timber there is a shade better feeling, but prices show very little improvement, and stocks, both here and in European markets, are large. The same applies to sawn timber, and values continue steady, with a moderate inquiry from the other side. The total exports of hewn timber since September 1, 1892, aggregate 1,873,546 cubic feet and of sawn timber 1,880,531 cubic feet. Hewn timber placed on the market will bring about ten to eleven and a-half cents per cubic foot for 100 feet average and classing "B1 good." Sawn timber is dull at eleven to eleven and a-half cents per cubic foot, basis of forty feet average. The lumber trade has been quite active during the week and there is a good demand for all desirable grades, with prices firm and hardening. The inquiry from Mexico, South America and domestic ports is very pronounced, some very large cargoes having cleared for these ports during the week. The schooner Napoleon Broughton cleared on the 5th inst. for New York with 64,000 feet of lumber and 160,000 shingles. The total shipments for the week amounted to 1,653,575 feet of lumber, and since September 1, 1892, the shipments aggregate 56,910,350 feet, against 42,883,150 feet for the corresponding period in 1891-92. Shingle manufacturers are complaining of the scarcity of cypress timber and stocks on hand are barely sufficient to run them until August. The price has been steadily advancing for some time, until it has advanced from eight to fourteen cents, and some choice timber is held at sixteen cents.

Beaumont.

BEAUMONT, TEXAS, May 9.

There has been considerable business reported for the week, and in every department of the lumber industry there is a promising outlook. The demand for all grades of lumber continues active, but prices show no disposition to harden. Orders have been coming in quite freely from points beyond the State, and at home buyers are purchasing liberally. The Beaumont *Journal*, in its weekly review, says: "Although the demand for all grades of lumber is quite as good as could be desired, prices obstinately refuse to move up. The market resists any attempted advance, even on bill stuff, which is confessedly sold below its value, and the same is true of clear stock. Texas is by far the heaviest buyer, but orders are also coming in quite liberally from the Territory, Kansas and Colorado. There are a few good export bills offering, which, in addition to the full supply of sawing orders now on hand, give the market a healthy tone." The shipments of lumber during the past month from this point aggregate 1869 cars, and for the corresponding month last year 1734 cars were shipped, showing an increase of 135 cars. The Texas Tram & Lumber Co. alone shipped 258 cars of lumber during the month of April. At Woodville last week there were two lumber plants sold at auction—one, the Tyler County Lumber Co., consisting of mill, planer and 1100 acres of land, which brought \$4300, and

the Warren, Lumber Co.'s plant. The last-named plant, consisting of two mills, planer and other machinery, brought \$31,000, and the lumber, consisting of 3,250,000 feet, realized \$20,000. The shingle trade is not as active as could be desired, the prices being low and the demand light. The Long Manufacturing Co. has booked some orders during the week, but the volume of business reported is only fair. This period of the season is always a dull one in the shingle line, and it is expected that trade will improve from this month throughout the season. The reports from the saw-mill section of Orange, Westlake and Lake Charles, La., are very encouraging, and business is reported active, with very fair prices ruling.

Iron Market Review.

The iron market during the past week has maintained a steady tone, notwithstanding the violent fluctuations in stocks and securities and the possible prospect of some tightness in financial matters. No better evidence could be brought forward as to the substantial condition of the iron trade at the present time than this fact. As a usual thing, iron is one of the first to feel the result of any serious financial disturbance, and particularly is this the case in spring, when the prospect of summer strikes is before the manufacturer.

In Chicago there has been more inquiries for iron than at any time during the past two weeks. Buyers who have held off, hoping for lower prices and in fear of further labor trouble, are now coming forward. Prices, while holding steady, have shown little or no change over the last two weeks. Quotations are, cash f. o. b. Chicago: Southern coke No. 2 foundry, \$12.50 to \$13.00; No. 3 foundry, \$12.25 to \$12.50.

Louisville shows no change of any consequence. Prices are, cash f. o. b. Louisville: Southern coke No. 1 foundry, \$12.90 to \$13.10; No. 2 foundry, \$12.00 to \$12.25.

In St. Louis there has been a less active movement than during the preceding week, most of the heavy buyers having placed their orders. Prices remain firm, cash f. o. b. St. Louis: Southern No. 1 foundry, \$13.50 to \$13.75; No. 2 foundry, \$12.25 to \$12.50, and gray forge, \$11.20 to \$11.40.

In Cincinnati the volume of business, while not so good as during last week, is quite satisfactory. Few large orders have been placed, but small purchases have been in considerable number and inquiries quite numerous. Prices remain, cash f. o. b. Cincinnati: Southern coke No. 1 foundry, \$13.00 to \$13.40; No. 2 foundry, \$11.50 to \$12.00.

The Lady Ensley Receivership.

Mr. W. K. Saulsbury, who was appointed receiver of the Lady Ensley Coal, Iron & Railway Co. on April 19, resigned on May 9, and Messrs. George L. Morris and A. G. Smith, both of Birmingham, Ala., were appointed receivers on a bond of \$100,000. The receivership was obtained through three bills, one filed by the Horse Creek Coal Co. for the purchase price of its property, one by unsecured creditors residing in Birmingham and the other by Mrs. Mary L. D. Ensley. The company's properties are valued at \$1,800,000, and its liabilities are \$320,000. At a meeting of the stockholders, held soon after the first appointment of a receiver, Mr. J. F. Martin, of Birmingham, was chosen president. Mr. Martin says the company's affairs are in excellent shape, and that the business will continue as heretofore.

Southern Iron Notes.

THE Southern Iron Co.'s stockholders met at Huntsville, Ala., on May 3 and elected directors for the ensuing year. Messrs. T. M. Steger and Hiram Stubbsfield, of Nashville, and Mr. Pullin, of Huntsville, were chosen to replace Jas. C.

Warner, Percy Warner and A. M. Shook, who resigned recently on account of differences regarding the Talbott steel patent.

THE work of moving the Hercules Pipe Works from Pell City to Anniston, Ala., is progressing rapidly. The grading on the new site is complete, and brick work on the boiler-houses and foundations is about finished. Nearly all the building, the boilers, stacks, flasks, patterns and a great deal of the machinery has arrived and been unloaded. It is hoped by the officials of the company to have the plant in operation by the first of July.

MR. A. H. SHEPARD will sell the property of the Woodstock Iron Co., of Anniston, Ala., at public sale on May 25 to satisfy a mortgage foreclosure in favor of the State Trust Co. The Woodstock Company has been in the hands of a receiver for the last six months, and this sale is a preliminary step towards reorganization. The property includes, besides two charcoal and two coke furnaces, over 50,000 acres of mineral and timber lands.

Pennsylvania Operators in West Virginia.

A tract of about 2500 acres of coal lands, located between Clarksburg and Fairmont, W. Va., has been purchased by Messrs. D. M. Hertzog, David Richey, Harvey Steel, Keil Long and Worth Kilpatrick, of Uniontown, Pa., the consideration being the sum of \$75,000. The property is along Mud Lick and Coon runs, and is near the Monongahela Railroad and the Monongahela Coke Works, and the new owners propose developing it to its fullest extent.

Coal and Coke Notes.

THE statement recently published in a prominent trade journal to the effect that the Mary Lee Coal & Railway Co., of Birmingham, Ala., had been placed in the hands of a receiver is emphatically denied by the president, J. A. Montgomery, who says that not only is the company in no danger of going into the hands of a receiver, but that its business now is much greater than at any time during the past year, and its prospects are excellent for the coming year. This company has been working for the Mexican and Central American coal trade, and has succeeded in securing a large portion of it. Most of its coal is now exported from Mobile and New Orleans, and if sufficient vessels could be secured the trade might be greatly increased. Part of its coke is being shipped to Mexico for the smelters.

THE shipments of coal and coke from the Pocahontas field for the week ending May 6th were as follows: Tons coal for week, east bound, 49,999; tons coal for week, west bound, 185; total, 50,184; coke for week, 1843; total coal and coke for week, 52,027. From the Clinch valley the coal shipments for the week were 1249 tons. The grand total of coal and coke from the Pocahontas and Clinch valley fields for the week was 53,376 tons.

THE reception-rooms and office of the general and executive committees of the Associated Engineering Societies of the United States and Canada and of the general committee of the World's Congress Auxiliary on the International Engineering Congress on and after May 1, 1893, and until the close of the World's Columbian Exposition, will be at No. 10 Van Buren street, Chicago, Ill. All communications after May 1 should be addressed to or to the care of Mr. Max E. Schmidt, secretary. Visiting engineers may have their mail thus addressed. The committee-rooms of the Associated Societies at the exposition will be situated in the southwest corner of the gallery of the mines and mining building, where the secretary or some of the staff will be present during the exposition to meet visiting engineers.

Electricity in Agriculture.

The March reports from United States consuls contain some very interesting information and valuable data on the application of electricity to agriculture and horticulture. The results of the experiments are of special interest to farmers and planters from the fact that the use of the electric current is becoming so general that it may be in a few years applied as easily and cheaply to the farming industry as it is now in cities for lighting and power.

The reports received are in reply to a circular issued by the government in April, 1892, asking for information relative to the application of electricity in agriculture. One of the replies received was from Commercial Agent Washburn at Magdeburg, Germany. It is very exhaustive and gives some comparatively ancient as well as more modern data. According to Mr. Washburn electricity has been applied by several German scientists to the cultivation of plants, grain and vegetables. In 1859 a scientist named Helmert conducted a series of experiments with pine-tree seeds, peas and lettuce by sinking a plate of copper at one end of the cultivated area, a plate of zinc at the other, and connecting them with an exposed copper wire. The action of this simplest form of handling the electric current resulted, so states the report, in healthier leaves and blossoms and better fruit in the case of the peas and lettuce, as compared with the same species raised at the same time without the aid of electricity. The pine seeds germinated earlier and more evenly, though the slips grew no faster than usual.

In 1861 a chemist named Fichtner attained remarkable results by experimenting in the same way on barley, peas, summer wheat and buckwheat. The following was the comparative yield in pounds from the same quantities of seed and same area of ground:

	Old method.	Electric method.
Barley	2,048.2	2,935.2
Peas	2,523.3	3,085.4
Summer wheat	1,482.8	2,317.3
Buckwheat	425.7	967.3

This showed an increase of from 16 to 127 per cent. It should be stated, however, that the galvanized soil was filled with "air drains," which it is supposed had a beneficial effect also on the seed.

Among the most extensive experiments ever made in this line in Germany are those of Professor Holdefleisz on a farm near Breslau. A beet-sugar field with the plants just above ground and in an even state of cultivation was selected. Copper plates, each 50x80 centimetres (about four and one-third square feet), were sunk into the ground to the depth of fifty centimetres (a little over seven inches), and in such a manner as to cover the width of two rows. The plates of each pair were fifty-six centimetres apart and connected by insulated wires with the poles of a 14-Meidinger battery. In other rows copper and zinc plates were placed at distances of thirty-three metres apart and connected by wire. At regular intervals, to increase the current, sets of copper and zinc plates, alternating, were sunk into the earth.

The result of this experiment was varied. The crop from the plants which were under the influence of the battery did not differ in size from one raised in the usual way, neither were the plants any different in appearance. The rows affected by the zinc and copper-plate system, which was by far the cheaper way, began to have a greener and healthier appearance within ten days after the experiment began. This was May 30, and the improved condition was noted until the middle of July. After that no other improvement was perceptible. The yield of these plants showed an increase of 15 per cent. over beets grown in

the usual way. The quality seemed to be unchanged. In experiments of the same sort tried with a field of potatoes the yield was 24 per cent. more where plates were used.

Professor Wollny, of the Royal Technical High School, followed these tests with an elaborate series lasting several years. The first experiments showed apparently that the grain experimented with—rye and beans—were only benefited by a weak current, and that beyond a certain limit the electricity did more harm than good. In 1886-87 four rows, each divided into eight sections, were reserved by him for testing and planted with summer rye, rape seed, peas, beans, potatoes and beets. The electrical agents were Meidinger batteries of four and five elements and the copper-zinc-plate current. The approximate results were as follows:

Growth.	Rye. Oz.	Rape Seed. Oz.	Peas. Oz.	Beans. Oz.	Pota- toes. No. tub's.	Beets. Oz.
Meidinger.	39 $\frac{1}{2}$	11	57	877-11	163	888
Plates.....	36 $\frac{1}{2}$	25-1-5	54	797-11	187	1069
Natural.....	35 $\frac{1}{2}$	27 $\frac{1}{2}$	50	808-11	190	1022

The results of these experiments, with the exception of beets and one or two other vegetables, were such as to discourage the general use of the electric current in Germany, as far as crop-raising was concerned. The soil's organic properties were found to be entirely unaffected by the current.

The effect of electric light on vegetation has been investigated, according to Agent Washburn's report, by C. W. Siemens, of England. Parcels of quick-growing plants in a hothouse were exposed to the naked light, to a light covered by thin glass and to three others covered by yellow, red and blue glass, respectively. The plants exposed to the thin-glass lamp appeared at the end of the test strong and healthy, but all the others had suffered more or less. Other trials made by exposing growing crops to an electric light protected by thin glass showed that they developed rapidly, but, except in the case of peas, yielded poorly.

The report of the several consuls contains a paper on electro-horticulture sent by Mr. Siemens to the Society of Telegraph Engineers. He used a Siemens dynamo of seventy volts intensity and a lamp of 1400 candle-power in conducting the experiments he describes. He tried the lamp in forcing the growth of flowers with good effect. Melons and berries ripened rapidly under its rays and were rich and sweet in flavor, much more so than the same varieties raised in the usual way. Mr. Siemens believes that some of the rays constituting white light produce chlorophyll, starch and woody fibre and have much effect in ripening small fruits. At the time his paper was prepared he was unable to determine what proportion of rays had such effect. The Siemens experiments have been made largely upon the theory that the growth of plants takes place principally at night.

Outside of the cases cited the consular reports contain no other instances where electricity has been used abroad in agriculture or horticulture.

THE State and city supplement of the *Commercial and Financial Chronicle* is one of the most valuable publications for reference published. It is issued by William B. Dana & Co., 102 William street, New York. The supplement for 1893 gives the various State debts and resources; also a list of the cities, counties and large towns of each State, with an account of the bonds issued, number paid, purpose for which issued, interest, amount, etc. The work is of the greatest importance to financiers and investors.

THE Upland Coal & Coke Co. has commenced the construction of a battery of coke ovens, 100 in number, at Upland, W. Va.

TRADE NOTES.

E. C. HILLVER & Co., of Newport News, Va., are erecting one of their seven-ton ice-making plants for the Henrietta Ice & Cold Storage Co. at Henrietta, Texas.

THE Farrel Foundry & Machine Co., of Ansonia, Conn., has placed in its yard a steam hoisting engine so arranged that it will operate a 15-ton crane, two derricks and a hoist.

MR. C. WALTER SMITH, the Atlanta (Ga.) architect, has prepared designs for residence buildings to cost \$2500, \$7000 and \$3000, and for an Episcopal church to be built at West End, Ga., which will cost \$3000.

THE Southern Plow Co., of Columbus, Ga., is doing such an extensive business that it has purchased an entirely new equipment of tools, etc., for the manufacture of farming implements, and is adding to the buildings of its present plant.

THE Grant Corundum Wheel Co., of Chester, Mass., whose works were destroyed by fire a short time ago, have removed to Worcester, Mass., where improved facilities will enable them to better supply their rapidly increasing list of customers.

THE Belden Machine Co. has been obliged to open a Western office at 85 Canal street, Chicago, to meet the demand in the West for their power hammer. Mr. H. O. Skinner is the manager. An assortment of the various sizes of power hammers will be kept in stock.

THE Queen City Supply Co., of Cincinnati, Ohio, has lately made a large contract with the Baltimore & Ohio Railroad to furnish its new shops at Chillicothe, Ohio, with belting. It has also made contracts of late with the Center Lumber Co., of Clay City, Ky., and other concerns to furnish them all of their belting and shafting.

THE Columbus (Ga.) Iron Works Co. is having an extensive trade in ice machines. Recent sales were of twenty-five tons each to the Crescent City Ice Co., of New Orleans; one of thirty tons to the Hygeia Ice Co., Pittsburg, Pa., and a five-ton machine to Robert McBride & Co., of Newnan, Ga.; also a machine to go to Cardenas, West Indies.

THE fire which destroyed the mineral-wool plant of the Roanoke (Va.) Mineral Wool Co., April 29, will render the concern unable to fill orders for about sixty days. Nearly all the plant was destroyed except the mineral wool, which is non-combustible, and demonstrated its success as a fire-proof material.

THE Lodge & Davis Machine Tool Co. will have an elaborate exhibit at the World's Fair, and cordially invite all interested in iron, steel and brass-working machinery to make headquarters in an office which they have fitted up purposely for the trade's accommodation. Any information relative to Chicago will be cheerfully given at the company's Chicago office, 68 and 70 South Canal street.

SEVERAL manufacturers of high-speed machinery have taken a license to manufacture the J. J. White patent journal-box, which is controlled by the Pennsylvania Machine Co., Limited, of Philadelphia. The Buss Machine Co., Chicago, and the John A. White Co., of Dover, N. H., will exhibit it at the Columbian Exposition. The Pennsylvania Machine Co. has also received an order for a portable engine to be sent to Liberia, Africa.

ALVA HUBBARD & Co., heating engineers, 116 North Howard street, Baltimore, Md., and 918 F street, Washington, D. C., have recently secured the following contracts: Residences for Ex-Gov. P. B. S. Pinchback, J. H. Buscher, Geo. N. Saegmuller, C. D. Maxwell, Louis C. Farrell (four), M. L. Weilley, W. J. Newton, Chas. W. Shiles, W. H. Jones, W. H. Fincke, W. E. Speir, W. L. Pierce, Jos. B. Hanway, C. F. Richardson, C. C. Martin, W. S. Powell, Mrs. Geo. Small. In addition they have contracts for plant in new office buildings for Abraham Fisher and L. C. Woods, store for A. H. Semmes and the new Palais Royal at 11th and G streets.

THE Dewey-Walker Refining Co., 1001 F street northwest, Washington, D. C., has its new sulphuric-acid process for refining sulphides from the Russell or other lixiviation processes in operation at the Marsac refinery, Park City, Utah, refining the sulphides produced by the Marsac mill of the Daly Mining Co., working by the Russell process of lixiviation. The process consists in boiling the sulphides in strong sulphuric acid in a suitable iron pot until the sulphides are converted into sulphates, adding water to the sulphates in a lead lined tank, filtering and then precipitating the silver from the solution. The gold remains with the insoluble residue on the filter and is easily recovered. The advantages of the process are that it is an entirely liquid one, and consequently works with slight loss and requires no skilled labor. It can be established at any existing lixiviation works, and its introduction is said to greatly reduce the cost of producing gold or silver.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Birmingham—Paint Factory.—The Bauxite Aluminum Paint Co. has been organized by H. Haupt and others and will establish a paint factory. The machinery has been bought.

Mobile—Iron Foundry and Machine Shop.—William Edgar & Sons, of Sanford, Fla., will remove their foundry and machine works to Mobile.

Opelika—Knitting Mill.—The Opelika Knitting Mill reported in this issue as burned will be rebuilt at once.

ARKANSAS.

Augusta—Tramway and Transfer Company.—E. G. Thompson, J. P. Penn, E. H. Connor, J. T. Hamblett, J. P. House, W. W. Folsom and others have incorporated the Augusta Tramway & Transfer Co. with a capital stock of \$20,000.

FLORIDA.

De Land—Irrigating Plant.—The Florida Well Works Co. will construct an irrigating plant on the Phillips farm at a cost of \$40,000.

Fernandina—Broom Factory.—The Loomis Manufacturing Co. will engage in the manufacture of brooms.*

Okalo—Machine Shop.—Graham, Gardner & Co. will establish a machine shop.

Orlando—Manufacturing.—McCall & Lee and J. W. C. Parker are building a furnace for manufacturing an insecticide.

GEORGIA.

Americus—Cotton Mill.—A company to be known as the Sumter Cotton Mills will organize to erect a factory. Charter has been applied for; will have a capital stock of \$15,000.

Atlanta—Electric-light and Power Plant.—The Georgia Electric Light Co. has closed contract for an extension of its plant. The building alone is to cost \$16,000.

Atlanta—Real Estate, etc.—B. S. Drake and B. T. Drake have filed an application for a charter for the Equitable Loan & Investment Co. to deal in and improve real estate, etc. The capital stock is \$25,000, with privilege of increasing to \$100,000.

Bainbridge—Lumber Mills.—The Birmingham Lumber Co. will erect lumber mills near Bainbridge.

Carrollton—Paper Mill.—The Wilkinson Paper Mill has been sold to J. Simmons, of Atlanta, representing certain creditors, for \$7500. A new company will be formed to operate the plant.

Jug Tavern—Cottonseed-oil Mill and Fertilizer Factory.—A company is being organized to erect a cottonseed-oil mill and fertilizer factory. R. L. Carithers is president, and R. B. Russell, vice-president.

La Grange—Lock Works.—Euler B. Smith and Dr. Drake have put in machinery for the manufacture of a patent lock.

Savannah—Cider and Vinegar Factory.—The Thomasville (Ga.) Manufacturing Co. will establish a cider and vinegar factory in Savannah.

Smithsonia—Cheese Factory.—Jas. M. Smith contemplates erecting a cheese factory.

KENTUCKY.

Bowling Green—Flour Mill.—The Bowling Green Milling Co. will erect a 200-barrel flour mill to replace its mill that was burned in December last.*

Glasgow—Ice Factory.—H. Raubold contemplates establishing an ice factory.

Henderson—Canning Factory.—R. M. Conway intends to start a canning factory.

Louisville—Stove Works.—The Progress Stove

& Tin Works has been incorporated with a capital stock of \$10,000.

LOUISIANA.

Lakeland—Sugar Mill.—The New York Warehouse & Security Co. is improving its Ingleside Mill, putting in new engines and other machinery.

Lecompte—Sugar Mill.—Eugene V. Weems is putting in a six-roller mill and Corliss engine.

New Orleans—Grain Elevator.—The Illinois Central Railroad Co. will erect a grain elevator of a capacity of about 250,000 bushels.

New Orleans—Ice Factory.—The New Orleans Ice Co., reported last week as incorporated, has the following directors: John M. Beath, James B. Guthrie, Henry H. Blanke, John Schlumberg and John Van Vrancken.

New Orleans—White-lead Works.—A. S. Ranlett, of New Orleans, will associate himself with St. Louis parties in the organization of company with a capital stock of \$200,000. Their purpose is to establish white-lead works in New Orleans.

New Orleans—Construction Company.—The Southwest Pass Improvement Co. has been incorporated with Elmer L. Corthellias, president, and Pearl Wight, vice-president, and a capital stock of \$1,000,000. The company's purpose is to improve and maintain the southwest pass of the Mississippi river. Collis P. Huntington, John M. Parke, Jr., Geo. O. Whitney, Wm. Agar and others are interested.

New Orleans—Saw Mills.—The Baker Saw Mill Co. will hold a meeting on June 1 to consider increasing its capital stock from \$20,000 to \$30,000.

Plain Dealing—Saw Mill.—J. T. Jones has begun the erection of a saw mill.

MARYLAND.

Baltimore—Packing-house.—Robert C. Griffith, John S. Gibbs, Edwin L. Griffith, Ernest Griffith and Mary E. Griffith have incorporated the Robert C. Griffith Co. for packing fruits and vegetables. The capital stock is \$20,000.

Elkton—Machine Shop.—J. F. Powers and Geo. J. Corey will establish a machine shop.

Frederick—Foundry and Stove Works.—An effort is being made for organizing a company to continue the operation of the Union Foundry and Stove Works which have assigned.

Washington, D. C.—Ice Factory.—The Great Falls Ice Co. will erect an extensive new factory at a cost of \$50,000.

MISSISSIPPI.

Osyka—Mercantile Company.—William Atkinson, Junius L. Bacot and Samuel A. Bacot have incorporated the William Atkinson & Bacot Co. with a capital stock of \$30,000.

NORTH CAROLINA.

Croatan—Saw Mills and Marl Works.—The Croatan Marl & Lumber Co. intends shortly to erect two saw mills and build a marl plant.

Durham—Metal-wheel Works.—A company has been organized and has purchased the right to manufacture a metal wheel patented by W. W. Taylor, of Waco, Ky. W. W. Taylor, Charles L. Searcy, W. T. Griggs, W. B. Surles, J. S. Carr, Leo D. Heartt, S. R. Carrington and others are members of the company.

Gaston—Cotton Mill.—The Modena Cotton Mills have been incorporated by J. E. Curry, L. L. Jenkins, A. C. Williamson and others. The capital stock is \$50,000.

Scotland Neck—Cotton Mills.—The Scotland Neck Cotton Mills will put in more machinery and build a new dyehouse, etc.*

Scotland Neck—Peanut Cleaner.—N. B. Josey contemplates establishing a peanut-cleaning factory.*

Vandemere—Lumber Mills.—Harvey Ellis, J. C. Hancock and W. S. Ottinger, of Philadelphia, Pa., have incorporated the Bay River Lumber Co. to manufacture lumber of all kinds. Their capital stock is \$30,000.

SOUTH CAROLINA.

Anderson—Shoe Factory.—J. S. Fowles and associates have purchased and will operate the Anderson Shoe & Leather Co.'s shoe factory. The price paid was \$350. The factory has a capacity daily of 200 pairs of shoes.

Bennettville—Hedge-fence Company.—J. N. Kervin, M. Neil and R. W. Wilson have incorporated the Marlboro Hedge Fence Co. with a capital stock of \$20,000.

Charleston—Lumber Company.—The Millard Brown Lumber Co. has been chartered with a capital stock of \$25,000. J. C. Millard is president, and P. C. Millard, secretary and treasurer.

Newberry—Cotton Mill.—The Newberry Cotton Mills will erect an additional building and put in 15,000 spindles, etc.

Newberry—Publishing Company.—E. H. Aull, William P. Houseal and James R. Davidson have incorporated the Newberry Publishing Co. to

transact a general book and pamphlet-publishing business. Its capital stock is \$5,000.

Rock Hill—Mining and Manufacturing.—The Piedmont Bell Mining Co. has been chartered to transact a general mining and manufacturing business with a capital stock of \$25,000. The incorporators are John Ambler, of Virginia; F. M. Mooley and W. B. Wilson, Jr.

TENNESSEE.

Elizabethton—Furniture Factory.—The Tennessee Furniture & Lumber Co. has purchased the plant of the Asheville (N. C.) Furniture Co. and will move it to Elizabethton as soon as the new factory building is completed.*

Knoxville—Baking-powder Factory.—The New South Baking Powder Co. has been organized for the purpose of manufacturing baking powder. A factory already established will be enlarged and operated. G. W. Altrus is president, and L. B. De Groot, secretary; directors, L. F. Williams, J. W. Booches, R. F. Gaut, G. Walters, L. P. De Groot and J. W. Dailey; capital stock \$30,000.

TEXAS.

Austin—Real Estate Company.—J. M. Knox, W. D. Gose and J. E. Henderson have incorporated the Rock Island & Texas Town Co., of Parkhurst, with a capital stock of \$100,000.

Cleburne—Ice Factory.—The Cleburne Ice Co., to operate a factory, has been chartered with a capital stock of \$12,000. S. E. Moss, of Waco; Coon Williams and S. E. Floore, of Cleburne, are the first board of directors.

Dallas—Manufacturing.—R. S. and J. K. Dennis and W. J. Wigley have incorporated the Dennis Manufacturing Co. with a capital stock of \$20,000.

Dallas—Trading Company.—David S. Lawhorn, J. S. Belt and W. W. White have incorporated the Granger Trading Co. with a capital stock of \$10,000.

El Paso—Artesian Well.—The city will expend \$20,000 in sinking an artesian well. The mayor can inform.

Galveston—Iron Works.—The Astall Iron Works Co. has been chartered with a capital stock of \$50,000 to operate iron works. Jesse Astall, Alexander Crane, Williamson Stephen, George C. Southitt and James J. Astall are the board of directors.

Haskell—Smelting Plant.—The Silver Pass Mining Co. has been organized for the purpose of erecting a smelter for treating copper and silver ore from the mines in Stonewall county.

Menardville—Mining Company.—J. K. Stone, J. K. Patterson, N. G. and H. F. Ferguson, J. P. Pugh, E. D. McLutosh, W. J. Evans, B. F. Stebbins, G. D. Lindsey and R. S. Archer have incorporated the San Saba Mining Co. to open mines. The capital stock is \$100,000.

Ringgold—Flour Mill.—J. T. Harris and associates are building a flour mill.

Rockport—Manufacturing.—The Gulf Camp Manufacturing Co. will establish a factory to employ 150 men.

San Antonio—Factory.—G. A. Duerler has obtained permit for a building to be erected at a cost of \$800 to be used as a factory.

Smithville—Cotton Compress.—The Smithville Compress Co., lately reported, has let contract to W. W. Howland, of Chattanooga, Tenn., for the erection of its compress.

Waco—Cotton Compresses.—W. A. Patterson and L. W. Galbraith, of Lampasas; W. T. Besonette, of Temple; Bart Moore, Charles Bannister and W. W. Seeley, of Waco, and E. Smith, of Philadelphia, Pa., have incorporated the Besonette Cotton Compress Manufacturing Co. with a capital stock of \$1,000,000.

VIRGINIA.

Berryville—Creamery.—John W. Lock and R. D. Hardisty intend to establish a creamery.

Danville—Drying Plant.—Pemberton & Penn have contracted for a reordering plant with a capacity daily of 20,000 pounds.

Emporia—Saw Mill.—The J. F. Holloway Mill Co. will rebuild its saw mill recently destroyed by fire.*

Indian Creek—Brick Works.—The Norfolk & Berkeley Brick Co. has been organized for the purpose of operating brick works. D. C. Forman is president, and Charles Eutzy is manager.

Norfolk—Warehouse Company, etc.—The Norfolk Wharf, Warehouse & Terminal Co. has been chartered with a capital stock of not less than \$100,000 nor more than \$1,000,000. Decatur Axtell is president; C. E. Wellford, secretary, and T. O. Barbour, treasurer.

Norfolk—Canal Construction.—The Lake Drummond Canal & Water Co. has been organized to construct a canal, at an estimated cost of \$2,500,000, from Deep Creek, Va., to South Mills, N. C., a distance of twenty-two miles. The canal is to be ten feet deep, and work on it has already commenced. Walter B. Brooks, of Baltimore,

Md., is president; W. M. Bosley, also of Baltimore, vice-president, and C. G. Ramsey, of Norfolk, treasurer.

Pennington—Flour Mill.—P. B. Lewis contemplates the erection of a steam flour mill.

Richmond—Lumber Mills.—R. A. Justis, M. W. Moncure, B. T. Watkins and F. H. Holloway have incorporated the B. T. Watkins Wood Co. to manufacture lumber and wood. Its capital stock is \$25,000.

Richmond—Mica Mining, etc.—The Lustre Mica Co. has been chartered to mine and manufacture mica. The capital stock is \$10,000.

WEST VIRGINIA.

Fairmont—Coal Mines.—David Richey, Keil Long, D. M. Hertzog and others, of Uniontown, Pa., intend to develop coal lands between Fairmont and Clarksburg, having bought same for \$75,000.

Jackson C. H.—Woodworking Factory.—Geo. A. Pringle and Lorin Stewart will erect a woodworking factory.

Kenova—Excelsior Works.—J. W. Shank, H. O. Shank, Rufus Switzer and F. F. McCullough, of Huntington, and Jno. O. Morris, of Teays, W. Va., have incorporated the Kenova Excelsior Co. with a capital stock of \$6000 for the purpose of manufacturing excelsior.

Morgantown—Brick and Tile Works, etc.—J. C. White and E. M. Grant have purchased the Geo. Vance farm near Morgantown, on which are extensive clay deposits. It is reported they will erect brick and tile works.

Moundsville—Saw Mill.—Frederick Weymann will rebuild his saw mill reported in this issue as burned.

Ripley—Merchandise Company.—C. C. Staatz, William Crow, Chas. W. Starcher, W. E. Walker, Edgar L. Atkins, H. F. Post and others have incorporated the Ripley Mercantile Co. with a capital stock of \$14,000.

BURNED.

Lambert's Point, Va.—Hotel Roma, owned by M. Mongialetto. It will be rebuilt at a cost of about \$7500.

Moundsville, W. Va.—Frederick Weyman's saw mill in Marshall county.

Opelika, Ala.—The Opelika Knitting Mill; loss \$13,000.

BUILDING NOTES.

Anniston, Ala.—Church.—Bids are wanted for the Methodist church at Anniston to cost \$25,000. Address M. F. McCarty.

Baltimore, Md.—Building.—Edward Brady & Sons have the contract for building an addition to Mount Hope Retreat, near Baltimore. It will be of brick with granite trimmings, three stories high, and is to cost \$30,000.

Baltimore, Md.—Church.—Appold Methodist Episcopal congregation will build a \$25,000 church on Chase street.

Bessemer, Ala.—Library.—The Public Library Association of Bessemer has let the contract for a library building. Work is to be commenced at once.

Corsicana, Texas—Church.—Methodists of Corsicana may build a church. Address C. L. Jewell.

Crisfield, Md.—Temple.—The building proposed for a temple by Crisfield Odd Fellows is to be of brick and will contain stores, lodgerooms and an opera-house. It is to cost \$7500. Address I. S. Lawson.

Elberton, Ga.—Hotel Addition.—Dr. N. G. Long will build an addition of forty rooms to his hotel in Elberton.

Elizabethton, N. C.—Courthouse.—Bonds to the amount of \$12,000 have been issued to build a courthouse for Bladen county.

Fayetteville, N. C.—Courthouse.—W. C. Troy and others want bids for building a brick courthouse at Fayetteville.

Florence, S. C.—Buildings.—W. J. Wilkins has the contract for rebuilding the Central Hotel. John P. Coffin will erect a five-story structure for the Bank of Carolinas.

Florence, S. C.—City Hall.—The new city hall will be built by J. W. Robertson, of Darlington, S. C., to cost \$4500.

Florence, S. C.—Church.—The proposed Baptist church at Florence is to cost \$10,000. C. C. Wilson, architect, Roanoke, Va., may be addressed.

Jacksonville, Fla.—Building.—G. F. King, of Savannah, Ga., will construct the proposed Union Building.

Jacksonville, Fla.—Union Building.—The union building at Jacksonville will be of brick, three stories high, and will cost \$25,000. It is to be occupied by the Board of Trade, the Jackson-

ville library and a lodge of Elks. Address Chas. H. Smith.

Knoxville, Tenn.—Buildings.—Stern Bros. will build three-story brick building and Heinmell & Baker will build a brick schoolhouse at Knoxville.

Lawrenceburg, Tenn.—A \$5000 college building is being erected.

Little Rock, Ark.—A \$10,000 residence of brick veneer is to be erected for T. B. Martin. The Ninth Street Christian Church will build a new brick edifice. Aaron Frank is to have a three-story brick steam laundry. The State Bank building is to be remodeled at a cost of \$5000. A \$22,000 school is being erected.

Little Rock, Ark.—Factory.—Buildings of the Arkansas Wood Manufacturing Co. will consist of a main building 60x250 feet, warehouse 40x250, two dry-kilns, a boiler-house and a storing-house.

Lockhart, Texas—Courthouse.—The \$54,000 courthouse to be built at Lockhart will be constructed of blue sandstone, with sandstone trimmings. It will have nineteen rooms, will be three stories high and will have a \$1500 clock.

Mountain City, Tenn.—Courthouse.—J. H. Church will receive bids for the new courthouse at Mountain City. W. Chamberlin & Co., Knoxville, are the architects.

Nashville, Tenn.—Temple.—Knights of Pythias at Nashville are forming a stock company to build a Pythian temple eight stories high.

New Orleans, La.—Block.—Leon Godchaux will build a \$25,000 brick business block six stories high.

Ocala, Fla.—Blocks.—Glozier, Kudder & Ottensoosser, of Cincinnati, will erect three-story block for clothing store. W. J. McGrath will build three-story block.

Pensacola, Fla.—The Pensacola Terminal Railroad Co. is erecting a brick depot.

Richmond, Va.—Church.—John Arnhem, of Richmond, will build Methodist church of wood to seat 350 people.

Tampa, Fla.—Block.—J. H. Krause, of Tampa, is to construct business block to cost \$15,000. The front is to be of pressed brick, iron and glass.

Texarkana, Ark.—Courthouse.—Work has begun on the courthouse at Texarkana for Miller county. It is to cost \$35,000.

Washington, D. C.—Barr & Sanner will build an apartment house of brownstone and pressed brick to be seven stories high; it will be located at Ninth street and New York avenue, northwest. Morgan E. Gale will build a \$30,000 residence of limestone and buff brick; it will be four stories high; location, 717 K street, northwest. J. W. Swainson is to erect four block dwellings for Mrs. O'Connor at 101 Second street to cost \$25,000; outside materials will be brownstone and brick, with hardwood interior finish. Asa Whitehead will build a four-story house on R street of brownstone and brick to cost \$15,000.

White Sulphur Springs, W. Va.—Hotel.—Plans are being prepared for a stone hotel for Orlan C. Cullen to cost \$50,000.

Winston, N. C.—Hotel.—It is reported that the West End Hotel Co. will rebuild the Hotel Zindendorf at Winston.

Wytheville, Va.—Church.—The Baptist church to be built at Wytheville will be of brick, to cost \$5000 and to seat 500 people. Contract is to be let June 1.

RAILROAD CONSTRUCTION.

Railroads.

Baltimore, Md.—Just 694 feet of the Belt Railroad Co.'s tunnel have been completed. The contractors expect to have it completed by October 1.

Baltimore, Md.—The Walbrook division of the Lake Roland elevated electric line will be connected with the main line in about two weeks. It has been found necessary to strengthen a bridge over which the cars will pass.

Charleston, W. Va.—The railway line from Charleston to Sutton, on the line of the West Virginia Central, has been completed, and, it is reported, has been accepted by the directors of the Charleston, Clendenin & Sutton.

Cheraw, S. C.—It is reported that the railway from Cheraw to Wadesboro has been purchased by the Atlantic Coast Line, and that a North Carolina extension will be built.

Cumberland, Md.—Work on the Cumberland & Hagerstown extension of the West Virginia Central has begun near Cumberland.

Fairmont, W. Va.—Washouts will delay the completion of the Fairmont, Morgantown & Pittsburg until after August 1. The bridges along the line are being erected.

Galveston, Texas.—Surveys have been made for a railway line to run from North Galveston to Beaumont, to be built by Louis F. Menage, of Minneapolis, Minn. The distance is about sixty miles.

Lake Providence, La.—The stockholders of the proposed Lake Providence & Western expect to build the line in a few months.

Lenoir, N. C.—The Caldwell & Northern Railroad Co. has let the contract for twenty miles of grading for its narrow gage line to Dunavant & Miller.

Portland, Texas.—Work has begun on the Monterey end of the Portland Railroad line.

Refugio, Texas.—It is reported that Kansas City capitalists may construct the Pan-American line as far as Refugio.

Ruddock, La.—Work has begun on a road in south Louisiana to be known as the Ruddock, Bonnet, Carre & Northern. The Ruddock Manufacturing Co. is interested in it.

Sherman, Texas.—The Cotton Belt Railroad Co. will build a brick roundhouse to hold five locomotives at Sherman.

Thibodaux, La.—A charter has been granted for a railway from Laurel Valley plantation, in Lafourche parish, to Rousseau Station, on the Southern Pacific. Wilson Lepine is president of the company.

Tyler, Texas.—It is understood that work is to begin at once on the construction of the proposed railway from Tyler to Alexandria, La., there connecting with the Morgan.

Street Railways.

Baltimore, Md.—The City & Suburban Railway Co. will adopt a car with double sliding doors. The management expects to have all the lines in operation by June 16.

Baltimore, Md.—The Lake Roland Elevated Railroad Co. will build a double-track line in Baltimore county from the city line to Lake avenue.

Georgetown, D. C.—Surveys are being made for an electric railway from the Chevy Chase to the Glen Echo electric road.

Hyattsville, Md.—The electric line which is to be a part of the Washington-Baltimore system has been graded in the District of Columbia nearly to the Maryland line.

Macon, Ga.—An electric railway system from Macon to Indian Springs, Ga., a distance of thirty-five miles, is proposed. T. J. Carling will build two miles of the line at once from Macon to the lands of the Ocmulgee Land Improvement Co.

Mobile, Ala.—The electric system of the Mobile Street Railway Co. will be completed about August 1.

MACHINERY WANTED

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler.—I. Looney, Benarnold, Texas, wants prices on a thirty horse-power boiler.

Boiler.—The J. F. Holloway Mill Co., Emporia, Va., will purchase a boiler.

Boiler and Engine.—J. S. Tyson, Savannah, Ga., will probably want boiler and engine.

Brick Machinery.—N. P. Smith, Marion, S. C., wants prices on machinery for making brick.

Broom Machinery.—The Loomis Manufacturing Co., Fernandina, Fla., wants broom machinery. Address S. L. Loomis, manager.

Cotton-mill Machinery.—Yount & Shrum, Newnan, N. C., will buy 200 spindles for mill.

Cottonseed-oil Machinery.—H. L. Davidson, 508 North Tryon street, Charlotte, N. C., wants to correspond with manufacturers of cottonseed-oil machinery.

Crematory.—Bids will be received until May 15 by the city of Vicksburg, Miss., for the building of a furnace to destroy garbage; W. L. Trowbridge, mayor.

Drill Press.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a 24-inch drill press.

Dry-kilns.—T. N. Windell, Box 243, Richmond Va., wants to correspond with lumber dry-kiln builders.

Dyehouse.—The Scotland Neck Cotton Mills, Scotland Neck, N. C., will buy equipment for dyehouse. Address A. McDowell, secretary.

Electric Plant.—Marcellus E. Thornton, Hickory, N. C., wants to build a plant to generate electricity by water-power.

Electric-light Plant.—M. R. Thorp, Washington, D. C., will receive proposals until May 23 for an incandescent electric-light plant.

Elevator.—Jeremiah O'Rourke, supervising architect, Washington, D. C., will receive proposals until May 26 for a hydraulic passenger elevator, etc.

Engine.—The Tennessee Furniture & Lumber Co., Elizabethton, Tenn., wants cash prices on a 100 horse-power automatic steam engine.

Engine.—Whitney, Pousland & Co., Arkansas City, Ark., want a second-hand engine, fifteen to thirty horse-power.

Engine and Boiler.—A vertical double-piston steam engine, upright boiler, about three or four horse-power, second-hand, in good order; must be cheap for cash. Address Lock Drawer L, Greensboro, N. C.

Flour Mill.—The Bowling Green Milling Co., Bowling Green, Ky., wants bids on the erection of a 200-barrel flour mill with complete equipment.

Furnaces.—Two hot-air furnaces are wanted by W. R. King, Lawrenceburg, Tenn.

Hydraulic Machinery.—J. S. Tyson, Savannah, Ga., wants to correspond with manufacturers of hydraulic machinery.

Ice Machinery.—Manufacturers of ice machinery should correspond with J. S. Banes, Greensboro, N. C.

Lathe.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a lathe twelve feet between centres, 22-inch swing; also a wood lathe and fixtures for same, to swing twenty-two inches.

Lath Mill.—The J. F. Holloway Mill Co., Emporia, Va., will purchase a lath mill.

Locomotive.—The Alabama & Georgia Lumber Co., Montgomery, Ala., wants a second-hand locomotive for logging purposes, 48-inch drivers, about twenty-five tons weight. Must be in first-class condition.

Paper-box Factory.—The Scotland Neck Cotton Mills, Scotland Neck, N. C., want outfit of machinery for paper-box factory. Address A. McDowell, secretary.

Peanut Cleaner.—N. B. Josey, Scotland Neck, N. C., may want a peanut cleaner.

Pipe, etc.—A. G. Pickett, Jr., Florence, Texas, wants to correspond with manufacturers of cheap low-pressure pipe, six to ten inches, with wire cone.

Pipe, etc.—The R. D. Cole Manufacturing Co., Newnan, Ga., wants to buy ten miles cast-iron pipe from four to ten inches diameter, six tons of pig lead, one ton of hemp, sixty fire hydrants and sixty gate valves.

Planer.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a 24-inch wood planer.

Pulley-molding Machinery.—The Salem Iron Works, Salem, N. C., wants to buy a full set of pulley-molding machinery, snap-flasks and all fixtures complete for same for molding pulleys from six to thirty-six inches diameter. Want the latest and most improved machinery for this purpose, machinery that will turn out the most and best work with the least labor possible. Parties manufacturing or having such machinery for sale will please send full illustrated descriptive catalogue, with full specifications and prices at once.

Rails.—The Hamburg Phosphate Co., Inverness, Fla., wants two miles of second-hand 20-pound steel rails.

Roofing.—I. Looney, Benarnold, Texas, wants prices on corrugated roofing.

Saw, etc.—The J. F. Holloway Mill Co., Emporia, Va., will purchase a cut-off saw and edging table.

Saw Mills.—T. N. Windell, Box 243, Richmond, Va., wants to correspond with saw-mill builders.

Shaper.—The Memphis Gin & Machine Co., Memphis, Tenn., is in the market for a 20-inch shaper.

Turbine Wheel.—H. T. Dulaney, Otto, Tenn., wants a small turbine wheel.

Woodworking Machinery.—J. S. Tyson, Savannah, Ga., will probably want a wood chopper.

Woodworking Machinery.—The Sanford Sash & Blind Co., Sanford, N. C., wishes to buy a good second-hand 36-inch double-drum sander, Egan make; also a bracket carver, same make, and all in first-class order.

Plans and working specifications will be received until June 5 for building a bridge across the Arkansas river at Broadway, in the city of Little Rock, Ark.; Geo. L. Basham and W. B. Worthen, commissioners.

The Cherry Implement Co., of Aurora, N. C., wants to buy about fifty cast-iron rims, 10-inch face and fifteen inches in diameter, very light.

The Tarboro Iron & Machine Works, of Tarboro, N. C., desires to correspond with makers of boilers (locomotive, fire-box or return tubular) with a view to securing agency.

The Texas City Improvement Co., of Galveston, Texas, will receive bids until May 30 for dredging a channel across the west side of Galveston bay.

The Broughton mixer for hard plaster seems to be in good demand. The manufacturer, W. D. Dunning, of Syracuse, N. Y., has an order from J. B. King & Co., of New York, for ten mixers for their extensive plant on Staten Island.

SOUTHERN FINANCIAL NEWS.

New Banks.

Knoxville, Tenn.—George W. Albers is to be president and W. J. Cartt cashier of the New Market Bank. The bank will open about June 1 with \$25,000 capital.

Princeton, W. Va.—The Bank of Mercer has been incorporated with \$25,000 capital. H. W. Stealey and others, of Princeton, are shareholders.

Sumter, S. C.—The Eastern Building and Loan Association of Syracuse, N. Y., has organized a "real estate bank" at Sumter with W. M. Graham as president.

Washington, D. C.—A new bank is to be erected on New York avenue, with offices above. It will be 110x10 and built of stone. Estimated cost is \$60,000.

Baltimore, Md.—The Old Town Fire Insurance Co. has declared a dividend of 3 per cent.

Baltimore, Md.—The Merchants & Mechanics' Permanent Loan & Building Co. has declared a semi-annual dividend of 3 per cent.

Baltimore, Md.—The First National Bank of Baltimore has declared a semi-annual dividend of 4 per cent.

Baltimore, Md.—The Commercial and Farmers' National Bank contributed \$50,000 in gold to relieve the financial stringency.

Baltimore, Md.—The City Passenger Railway Co. has made a call of \$5.00 on each of the 40,000 shares issued for cabling its line.

Birmingham, Ala.—The annual meeting of the Alabama Bankers' Association began at Birmingham on May 9. The sessions lasted three days. Papers were read, addresses made and officers elected.

Chattanooga, Tenn.—The Chattanooga Banking & Storage Co., before noted, will begin business about June 1.

Columbia, S. C.—The legality of the new State refunding bonds is to be tested in a suit by Hon. T. C. Robertson, who has bought \$250,000 worth of them. Governor Tillman says the point made is that the constitution requires that an election must be held before bonds increasing the State's debt can be issued. He claims there was no increase of the State's debt, but that the refunding bonds simply change the form of the indebtedness. The Baltimore (Md.) Trust & Guarantee Co., which has been acting as agent for the syndicate purchasing the bonds, will obtain legal advice in the matter.

Columbia, Tenn.—Madison Betts, as receiver, has taken charge of the suspended Columbia National Bank. Payments have not been resumed.

Covington, Ky.—The city of Covington will sell \$148,218.90 worth of 5 per cent. bonds for street-paving purposes. Address the city clerk.

Darlington, S. C.—The Atlantic Trust Co. of New York is trying to compel the corporation of Darlington to pay \$80,000 of Charleston, Sumter & Northern Railroad bonds for which it subscribed. The city claims breach of contract on the part of the railway company.

El Paso, Texas.—The city council will sell \$25,000 worth of bonds to pay for the construction of an artesian well.

Fayetteville, N. C.—Creditors of the suspended Clinton Bank are to receive a dividend of 33 1/3 per cent.

Frederick, Md.—A clearing-house association has been formed at Frederick with the Fredericktown Savings Institution as the depository bank.

Little Rock, Ark.—The net earnings of the Capitol Building Association in the past ten months have been 10 per cent.

Louisville, Ky.—The Bank of Louisville and the Bank of Kentucky re-elected their present officers and directors at the annual meeting, except E. A. Heinatt, of Louisville, who is succeeded by E. A. Heinatt as a director.

Montgomery, Ala.—The city council will issue \$125,000 of street-paving bonds. Address the city clerk.

Newnan, Ga.—The city of Newnan will sell \$50,000 worth of 6 per cent. water-works bonds. Address the mayor.

Newport, Ky.—The city will sell \$42,000 worth of 5 per cent. funding bonds. Address the mayor.

Palm Beach, Fla.—A loan and trust company is to be organized at Palm Beach instead of the bank first proposed.

Roanoke, Va.—L. W. Terrill has been elected president; Arthur Enock, vice-president, and W. L. Andrews, secretary, of the Roanoke board of the New South Building and Loan Association.

Roanoke, Va.—The Roanoke Fire Insurance Co., before mentioned, has been incorporated under the name of the Roanoke Underwriters' Agency, with Asa Rogers as president, and Hubert Smith, general manager. The capital is \$250,000, of which \$130,000 is paid in.

Rock Hill, S. C.—The Cottage Home Building and Loan Association has been chartered at Rock Hill. W. B. Wilson, Jr., is president.

Richmond, Va.—The bondholders' commit-

tee appointed to settle the question of issuing the new bonds of the Virginia State debt have decided as follows: Fourth-class investors in old securities will receive 75 per cent. of the par value of their holdings in new bonds; third-class will receive 70 per cent. of par value, with extra deduction of \$1.50 per \$100 in new bonds; second-class will receive 75 per cent. of par value in new bonds, with extra deduction of \$2.50 on each \$100 worth. First-class will receive 60 per cent. of par value of two-thirds in new bonds and par value of the remaining third in West Virginia certificates.

South Boston, Va.—The Bank of South Boston, organized in May, 1887, with a capital of \$50,000, now has a surplus of \$20,000.

TRADE NOTES.

The patrons of the Goodsell Packing Co. will be interested in knowing that this company, which is located in Chicago, has been compelled to remove its headquarters to No. 20 West Lake street on account of the increase in its business. The new location gives it very desirable and commodious rooms. The Goodsell Packing Co. has an interesting exhibit of its work in the machinery hall annex at the World's Fair which all should examine. It is located in section 14, columns I. G., 33.

The American Ship Windlass Co., Providence, R. I., is shipping a large number of its steam capstans and windlasses. A recent order was received to ship a capstan to Portland, Ore., for government use. The list of concerns which are now using capstans and windlasses made by this company shows that 721 have been purchased for such plants as Cramps' ship-yard, Philadelphia; Maryland Steel Co., Sparrow's Point, Md.; Atlantic Works, Boston; Columbian Iron Works, Baltimore; Harlan & Hollingsworth Co., Wilmington, Del., and the Newport News Ship-Building Co., Newport News, Va. A feature of the business is the Liverpool trade, which is rapidly increasing.

The Kirker & Bender Fire-Escape Co., of Louisville, Ky., has placed on the market an improved means of egress from buildings in case of fire, which combines the best features of a fire-escape and standpipe. There are no ladders or steps to the invention. The escape is cylindrical in form and consists of a chute or slide of sheet steel winding around within the standpipe which acts as a support and water tower. By means of the escape from seventy-five to 100 persons can leave a building in one minute. Besides being used as a fire-escape and extinguisher, the invention is provided with hose-hoisters and connections which are of great service to the firemen. The company has many testimonials from architects, fire-department officials and others which show the value of its appliance.

The Philadelphia Engineering Works, Limited, has contracted with the Poughkeepsie Iron Co. for a complete blast furnace plant at Poughkeepsie, N. Y. The plant will be equipped with three 19x60 Gordon-Whitwell-Cowper fire-brick hot-blast stoves, three Corliss valve horizontal blowing engines, eighty-four inches diameter of blast cylinder, fifty inches diameter of steam cylinder, seventy-two inches stroke, of their latest patterns and designs, 1200 horse-power of Stirling water-tube boilers and all the pumps and piping necessary for the plant. The whole work will require about 1,000,000 fire-brick, the orders for which have been placed with Mr. C. N. Christie, of Poughkeepsie, N. Y., and Mr. John B. Marie, of Philadelphia. The plant is to be completed and ready for operation the latter part of October.

The Famous Manufacturing Co., of Chicago Ill., has a press for baling shavings which will interest everyone connected with the lumber trade. The press makes a bale 14x18 inches and of variable length. Fully 100 pounds can be placed in a bale 14x18x6 inches, so that from ten to fifteen tons can be loaded into a box car. It will readily bale five tons in an average working day of ten hours, which is the average quantity of shavings produced daily by a fair-sized planing mill. Only one operator is needed, and the work will not cost over sixty cents per ton. Baled shavings make a desirable and economical fuel, and it is claimed that a ton of them will actually give as much heat as a ton of coal. They are also in much demand for horse bedding, merchandise packing and a hundred other purposes. The press will also bale cut hay and feed of all kinds, as well as manure, etc.

Two patents which will have an important bearing wherever the overhead system of electricity is used for power have just been granted at Washington to Charles J. Van Depoele and assigned to the Thomson-Houston corporation. The claims allowed cover the "underneath contact made either by a rolling wheel or a sliding spoon contact piece, and the converse of these two cases;" also the reversibility of the trolley pole on top of the car, enabling the contact to be made on either side of the trolley as desired. It is claimed that these patents give the Thomson-Houston Company control of all the overhead electric railway patents in this country and place

almost unlimited legal power in the hands of its successor, the General Electric Co., for the payment of royalties, etc., from many street railway companies now using trolley systems not previously protected by these patents.

The Vilter Manufacturing Co., formerly the Weisel & Vilter Manufacturing Co., Milwaukee, Wis., manufacturer of Corliss engines, ice-making, refrigerating, brewers' and bottlers' machinery, etc., reports a lively trade. It has recently closed contract with the Enterprise Box & Lumber Co., of Milwaukee, for a 20x42 Corliss engine with complete rope-transmission machinery; with the Fairbank Canning Co., of Chicago, for a 200-ton refrigerating plant with large size cross compound Corliss engine. The company recently furnished Swift & Co., packers, Chicago, with two 200-ton refrigerating machines and three Corliss engines, and also furnished Nelson Morris & Co., packers, Chicago, a refrigerating plant of 200 tons daily capacity, with compound Corliss engine, and is now putting in the extensive refrigerating plant for Cudahy Bros., packers at Milwaukee, comprising two 150-ton refrigerating machines and five Corliss engines, two of which will be used to drive the refrigerating machinery, two for driving the general machinery and one for electric lighting and power purposes. This plant will be one of the most complete in the country and the finest in the Northwest.

TRADE LITERATURE.

BRIGGS & LEIBIUS, Toledo, Ohio, have issued an artistically illustrated catalogue showing designs in mantles of all descriptions, movable gates, lamps, interior woodwork, wood carpeting, etc. The book also contains many designs for Japanese and other varieties of screens, as well as bamboo work. It consists of eighty-eight pages, and is tastily arranged.

THIS year's edition of the Browne & Sharpe Manufacturing Co.'s catalogue issued at the general offices, Providence, R. I., contains 366 pages, and is of small and convenient size. Much of the catalogue has been revised and rewritten, and the reader finds many additions to the tools and machinery turned out by this concern. Among the new machines are a No. 2 and a No. 3 universal milling machine, No. 2 and No. 3 plain milling machine and a No. 1 automatic screw machine.

A CATALOGUE just published by S. R. Krom, of Jersey City, will interest the buyers of ore-crushing and concentrating machinery. A specialty is made of Lexiviation mills with rolls for pulverizing, and the manufacturer claims that these mills with rolls are much more effective than stamping machinery for pulverizing. Mr. Krom has recently taken the whole building Nos. 113 and 115 Plymouth street, Jersey City, putting in complete new and improved machinery for the manufacture of his specialties.

TAKING advantage of the attractions offered in America this year to Europeans, the Brown & Sharpe Manufacturing Co., of Providence, have issued a book of useful information to tourists from abroad, which will also be handy for tourists in this country. It includes information about railways, banks, hotels, etc., some historical data, a sketch of Newport, and gives the time and distances by rail from various cities to Chicago. Illustrations of the company's original and present plant are found between the covers.

W. H. LEWIS, master mechanic of the Chicago, Burlington & Northern Railroad Co., writes to the J. A. Fay & Egan Co., Cincinnati, Ohio, as follows: "Your new catalogue received, for which please accept my thanks. It is certainly a beauty and a work of art, and is evidence of a prudent management, as it presents your business in a form that will be valued and preserved, in place of spending large amounts for cheap circulars, etc., that are not in form for ready reference and are soon consigned to the waste basket."

The Niagara Stamping & Tool Co., of Buffalo, N. Y., makes its annual trade announcement in a red-colored volume of over 100 pages, profusely illustrated with cuts of sheet-metal-working machinery. Can-making apparatus, shears of all sorts, nippers, dies, punches, tinsmiths' tools, presses, rolls and hammers are among the articles listed, all of the most improved design. One finds some excellent ideas in power presses, which are shown in many varieties. A picture of the company's works is given in the fore part of the catalogue.

THE catalogue of the Rife Hydraulic Engine Co. just received is a neatly arranged little book, very handsomely printed and illustrated. It describes the several varieties of the Rife automatic hydraulic engines or rams made by this company, whose offices are at Roanoke, Va. The rams are made in Waynesboro, Va., and San Francisco, Cal. They are designed to supply water for irrigation purposes, railway tanks, factories, placer mining, stock-yards, etc. They can also be utilized in dairies, country residences, etc. One of the main advantages claimed for the

Rife ram is that it can be used for a water supply where steam or electric power would be too expensive.

"CHAMBERS'S PICTURE BOOK FOR BRICK MANUFACTURERS," issued by the Chambers Brothers Co., Philadelphia, Pa., is a picture book in the true sense of the word. Between its covers can be found elaborate views of the various brick-making machines manufactured by this company. One of these machines, an auger brick-maker with automatic wire cut-off, has an average daily product of from 60,000 to 75,000 brick. It is the only auger machine that automatically sands all sides of the clay-bar. The different styles of augers are also depicted in the catalogue, while the reader finds views of the machinery at work under various conditions, as well as of the kiln, castings, machine parts, etc.

ONE of the finest catalogues, if it can be called a catalogue, which has been sent to the trade this year is the list of the Yale & Towne Manufacturing Co., of Stamford, Conn. It is a book of 300 pages containing a likeness of Linus Yale, the inventor of the lock, a comparison of the old-fashioned key and Yale flat key and illustrations of over 150 styles of locks for every purpose for which locks can be used. A feature of the book is the list ornamental designs as applied to door handles, escutcheons, knobs, etc. The Yale & Towne Manufacturing Co. have employed many artistic designs in this branch of their work which are shown to the best advantage in the work they have just published. In typographical work, arrangement, binding and general excellence the catalogue is a model trade publication.

MANUFACTURERS and real estate investors will be interested in a map of what is called the Camden region of West Virginia. It comprises Marion, Harrison, Lewis, Upshur, Gilmer, Pocahontas, Braxton, Randolph, Webster and Nicholas counties, and offers great advantages to the farmer, the miner and the manufacturer. Some of the lands are heavily timbered, while excellent farms for crop raising and grazing can be purchased at a very low price. At Camden-on-Gauley special facilities are offered for manufacturing, with an abundance of power and an outlet to market by the West Virginia & Pittsburg Railroad. The country is traversed by the Camden system of railways. The map is accompanied by a prospectus fully describing the resources of new West Virginia, and giving much valuable information.

CATALOGUE D, recently sent to the trade by E. B. Holmes, of Buffalo, N. Y., is a model of its kind. The work contains nearly sixty illustrations of the woodworking machinery, etc., which this firm is now placing on the market. In the front portion is a view of the Holmes plant at Buffalo, and a very pretty and appropriate border. Among the machines illustrated is the Grand Pacific fast feed flooring machine, which will work up to twenty-six inches wide and six and a-half inches thick. An interesting attachment is a variable feed device by which the operator can regulate the feed of the machine to its full capacity whether the material be wide or narrow, or cut heavy or light. It will work equally well with hard or soft wood. It is the invention of the Messrs. Holmes. Other machines noted are the Niagara bed surfer, cabinet planers and surfacing, a pony planer, single or double planer and smoother, molders of all varieties, and several improved resaws, band saws, etc. A number of deserved testimonials are published on the closing pages of the catalogue.

THE last trade announcement of the East Berlin Iron Bridge Co., East Berlin, Conn., is one of the most elaborate publications of the kind ever issued. The statement on the first inside page that the company designs and constructs roofs, bridges, buildings, etc., of steel and iron is very simple, but means much. As stated in the introduction to the catalogue, modern shop practice has advanced with such rapid strides that manufacturers with modern built and equipped buildings can turn out work at a fair profit where old-fashioned plants of equal size cannot be made to pay their expenses. The Berlin Company has reduced the construction of iron and steel buildings to a science in every sense of the word. Strength and lightness in proportion to the size of the structure have been considered, and it is evident from the character of the patronage received that these points have been very successfully considered. The corporation has a large force of civil and mechanical engineers and architects, and is in a position to make contracts for foundries, rolling mills, machine shops of all kinds, power-houses, boiler-houses, train-sheds, and, in fact, any kind of structure which can be built of iron or steel. Some of the views in the book are those of the boiler shops at the Cramp ship-yard, Philadelphia; boiler and machine shops of the Newport News Ship-Building Co.; sections of the plant of the Dry Docks Engine Works, Detroit; machine-room of the Winchester Repeating Arms Co. and train-shed of the New York, New Haven & Hartford Railroad Co. at New Haven. In the list of bridges one finds truss, cantilever and suspension structures, some of which are among the largest in the country.

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